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THE NATIONAL APPLE USERS GROUP



AUGUST 1989

VOLUME 4(4)



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There are a number of ways to contact Apple2000.

Force users who have a query about the service can contact the administrator, John Lee, directly for help and advice. Call him on the number opposite or send a message to his box on the Force.

If you wish to order goods or services from Apple2000, call Irene on 051-928-4142 or (during office hours) call Alison on 051-928-4142. Both have Ansafones, in case they're not around. Alternatively you can Fax. to 051-928-4147, write to the PO Box or (if you use comms) you can leave orders on TABBS addressed to the SYSOP.

If you are experiencing problems with Apple hardware or software Dave Ward and Tony Dart run the Hotlines and will try and help you.

We are very interested in the activities of local user groups, and if you have any information which you would like publicised John Lee would like to hear from you.

Moans and Groans - We don't get many of these, but the Editors have broad shoulders, so send these to them via the PO Box.

A little praise for a few of our authors wouldn't go amiss. Send all comments, and contributions, via the PO box, especially suggestions about what you would like to see in your magazine.

Apple2000 supports users of all the Apple computers. The IIT 2020, I, II, II+, //e, //c, //c+, Iigs, ///, Lisa, XL, Mac 128, 512 MacPlus, SE, SE/30, Mac II, Ilex and Iix

Contributions and articles for the magazine are always welcome. We can handle any disk size or format. Please send to the PO Box, L21 8PY.

NOTE:

In general the front half of the magazine is for the Apple II, Apple Iigs and Apple ///. The back half for the Macintosh and Lisa. Look out for the descriptive page icons.

Key:

Apple II, //e and //c

Apple ///

Apple Iigs

Macintosh, Lisa

Macintosh II



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Chairman's Corner



□ Apple are not in the habit of announcing new products before they are ready, but every so often they feel that they are working on something so important that they want the world to know about it as soon as possible. By doing this, they give not only their hand-picked software developers, but all the other developers as well, the chance to input ideas to the project.

One of these rare occasions has just happened with the announcement of System 7.0 for the Macintosh. This product is not due to be released till next year, but we have been told now what it will contain, so we can plan ahead for its far reaching implications.

Advance notice of System 7.0 in the computer press has concentrated on the speculation that only the 'X' series of Macintosh computers are to be supported from now on. This is incorrect. It is true that System 7.0 will only show its true paces on the Mac IIx, IIfx and SE/30, but it will run on the other machines, even the Mac

Plus, albeit without the full power.

Why System 7.0 is so important to us is the philosophy embodied in its development. Macintosh users are quite used to being on the leading edge of computer development. It is quite unthinkable for us to work under anything but the friendly Macintosh environment. However, there are some serious limitations at present in what a computer can do. We all accept these limitations as we know no other way. The newcomer to computing often asks: 'Why if things work logically on the Macintosh can you not do ...' It is these areas that Apple is now attacking with System 7.0. The goal is that the Macintosh will truly work instinctively and logically with everything doing as you would expect and no less.

With the Macintosh came the concept of WYSIWYG, but as all who have attempted desktop publishing know, it is not so much WYSIWYG but WYGIBTWYS (What You Get Is Better Than What You See). The new Macin-

tosh outline fonts will try to address this problem. It will still not be a true Postscript display on screen, but very nearly so. Gone will be the 'jaggies' associated with a 60 point text display!

For those working with spreadsheet programs, how many have cut and pasted a selection of cells to a word processor, only to find they wished to alter a value on the spreadsheet? Active cut and paste under MultiFinder will update the product if the source is altered.

One of the major problems that we all find these days is that programs seem to get larger and larger. It is impossible now for a complete program to be held in memory, and so it is usual to layer it in as needed. In desktop publishing it is also usual to layer the working document to disk as well. However some programs simply cannot work in this way, and require a large memory space to work. System 7.0 will use spare disk capacity as 'virtual' memory, thus expanding the workspace available to a program to the size of the hard disk. Things might work a little slowly under this method, but they will work!

Connectivity is the byword these days from Apple, and System 7.0 intends to make this even more transparent between systems than it is now.

All in all System 7.0 is a most exciting development. Further details will be found in the Macintosh pages of this magazine.

Ewen Wannop



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The Editorial team is:

Apple II
Ewen Wannop

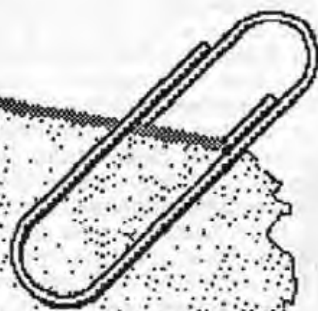
Macintosh
Norah Arnold
Irene Flaxman

Many thanks to all those who work behind the scenes and who receive no personal credit. These people are the stalwarts of Apple2000.

Additional thanks to Walter Lewis of Old Roan Press (051-227-4818) for our printing service, and to Ian Sharp of Sharp Studios (051-227-2788) for our cover design. (Graphics for the cover design supplied by Apple Computer UK Ltd, Adobe Systems Inc., Cricket Software.)

Apple2000 are Founder Members and
Wholehearted Supporters of the
Apple User Group Council

Letter Box



APPLE II LETTERBOX

Mill Hill
London

Dear Sirs,

As someone who will soon become an owner of an Apple //e computer could you please advise on:-

- (a) How to connect it to a conventional TV set
- (b) What are some recommended printers, dot matrix types?
- (c) How does one increase Ram from 48k to say 96k
- (d) Can a hard disk drive be added on?

If it's a lot of trouble to answer these questions don't worry because the Manuals may help.

V Harwood

□ It is no trouble to answer your questions and in any case I doubt if the manuals would help you answer all of them.

(a) Nearly all the //e computers found in the UK have PAL video output from the phono line socket. If you have a video recorder, then you only need to connect the two line sockets together to display colour on your TV screen. Without a line input, you will need to fit a small modulator to bring the signal up to Radio Frequency level at the Aerial socket of your TV.

(b) The recommended printer for all Apple computers is the ImageWriter driven by the Apple Super Serial Card. More software supports this combination than any other printer. The ImageWriter can be easily obtained secondhand these days. Alternatively you could use an Epson MX80 or compatible printer driven from a parallel printer card. There are many other printers that emulate the Epson standards.

(c) The Basic //e comes with 64k of Ram on board. You will need to add a //e 80 column card to allow many programs to work. There are quite a few 80 column cards on the market, and nearly all have an extra 64k of Ram on board. Get one of these cards to extend your memory to the full 128k. This will allow you to use not only 80 column text but double-hires graphics as well. Cirtech make such a

card and this is readily available from Apple II dealers. If you wish to extend memory even further, then you need to look at Ram cards that follow the Apple Peripheral Device protocols. These usually start at 256k and can be as big as 16 megabyte and are commonly known as Ram Disks. Typically a 1 mb card should cost around £200.

(d) It is as easy to add a hard disc as to add a Ram Disk. You must have a SCSI card in one of your Slots, usually Slot 7, and then you add any SCSI hard drive. For the //e you can choose between the Apple, Cirtech or CMS SCSI cards. Choose any SCSI hard drive you like with a maximum capacity of 32 mb. If you buy a normal drive it will come ready formatted, probably for the Macintosh, all you need to do then is go to a disk utility program and ask it to Format the drive in that Slot for ProDOS.

If you are building your own drive (see the articles by Ewen Wannop in recent issues of Apple2000), then you will need to low-level format the drive as well. The routines to do this are currently on TABBS and in the IIGs library, they will soon appear in the Apple II ProDOS library as well.

The Boffin

MACINTOSH LETTERBOX

Romford
Essex

Dear Sirs,

I am not sure whether my problem requires me to re-install and re-format my drives. However, I would like a copy of "SF&I" at hand in case I need it. Since I am not currently equipped to use Bulletin Boards, including TABBS, can I obtain "SF&I" on disk, through the Apple2000 MacLibrary?

My problems concern a pair of Seagate ST-251N drives, in a third-party cabinet with power supply, very much along the lines of the Computer

Shopper articles. The drives were formatted by the firm that sold them to me, and boot up when run one at a time. However, if I boot up the Mac SE from a floppy, the hard disk icon does not appear on the desk-top. This, of course, precludes opening the hard disk, in particular for any operations on the hard disk System file. The hard disk is visible to "Disk First Aid", however, this reckons "repair not required". The hard disk formatting software is by Fractal. Partly because of the initial discounted price of the drives (ghostly laughter from sundry Apple Centres!??) and partly as a legacy of some other problems which occurred along the way, I do not feel able to seek advice from the firm who sold me the drives.

I would like more information about SCSI Tape Streamers and the need for a SCSI Bus Test-Set.

PC Weedon

□ First of all, SF&I is available on disk 188 in the Mac Library.

Concerning your hard drives, assuming that each has a different SCSI priority, have you perhaps put a System Folder onto each drive? The Mac does not like more than one System around, and tends to ignore the second drive if it has a System installed. To see another drive with a System on it, you will need one of the 'Mount All' type programs, or the CDev 'SCSI Tools'. This small program allows the mounting of any SCSI device from the Control Panel. It is available for a nominal price from:

P. Mercer,

681 East Seneca Turnpike, #A4,
Syracuse,
NY 13205.

Phone: (315) 492-3348.

The way that SCSI drives operate on a Macintosh is quite complex. Each drive has a small 'hidden' boot file that was laid down when it was low-level formatted. When the Mac is switched on, it interrogates the SCSI bus and loads any drivers on any drives that it sees. These drivers are then used to access the drives later. HDFS from Apple will only see drives that Apple themselves use, it is for this reason that you would need SF&I to low-level format any other make or type of drive.

Somehow there is an interaction when more than one System is present, and only one drive is mounted and seen. However, the various SCSI utilities will of course see these drives, and mount them if necessary.

At the moment there are only a few Tape Streamers available for the Mac. There are quite a few SCSI streamers around for the IBM however, but there is little in the way of software

Please submit all letters and articles to the magazine on disk wherever possible. The disks will be returned to you when the magazine is published. If you have a modem, send us letters, articles and Public Domain programs either to BSG005 or to TABBS (000005-746707).

that can see and use tape drives. This is a situation that may well change, and we all need to keep an eye out for general purpose programs that can access industry standard Tape Streamers on the SCSI bus.

I do not know of any SCSI Bus Test-sets. Perhaps someone else could help us with this? I would suspect your bus is fine though if you are managing to mount the drives, albeit one at a time.

The Boffin

Ilgs FONT LETTERBOX

Edinburgh
Scotland

Dear Ewen,

As an enthusiastic Ilgs and AppleWorks user, I ordered GS Works as soon as I saw it mentioned in A+ magazine last summer. Claris took over Styleware and, in an amazing piece of doublethink, wrote to me in Scotland offering an upgrade to AppleWorks GS from AppleWorks at a reduced price. The catch was that I had to pay in US funds (no Credit Cards) and have it delivered to a US address. So I ordered it from Programs Plus in Connecticut and received it 4 days later. I cannot recommend Programs Plus highly enough. They are cheap, quick and efficient.

As an accountant, I soon noticed the lack of £ signs. Although clients seemed to understand when I sent them a bill marked 100.00 and sent pounds rather than chickens or carrots. I felt that it would look much nicer if I could ask for £100.00.

I pored over any and every reference in A+ or A2 Central to fonts or font editing. At last, the March issue of A2 Central was devoted almost entirely

to fonts. Better yet, it contained an offer of a Shareware Font Editor (Font Doctor) which was duly sent for.

At about the same time, Apple2000 brought out a new PD disk in the GS library, Disk 12, containing both Font Doctor and a program switching ASCII characters within a font.

Font Doctor allows the editing of characters, but this entails drawing your new character: while this may not be too difficult a task, why bother when the character you need may already be present within the font and simply need to be switched into the set of characters used by your program. In most fonts the £ sign is present as ASCII character 163, while the useless "hash" is ASCII 35. A simple switch, using the Character Switching program should suffice.

I say *should* because this is where I almost came unstuck. My first mistake was to try to alter New York, the font which I normally use for correspondence and fee notes. Unfortunately, New York in 10 and 12 point is used by AppleWorks (as are Shastan and Geneva and Monaco) so trying to alter it caused problems with both Font Doctor and Font Switcher. Even renaming the font did not seem to help, perhaps because each font has a specific family number.

I therefore changed tack. Firstly I picked a font, Willowdale, which I found pleasant looking, which contained a £ sign at ASCII 163 and which was unused by the AppleWorks GS system. Using the Font Switching program, I switched the relevant characters, saved the changed font and re-booted so that the font list was updated. No luck! I could see the £ on screen, but printing resulted in the return of the hash. A quick phone call to Dave Ward on the HotLine: he

suggested that all the font sizes present in the Fonts directory might need to be changed. In fact, I simply removed the other sizes and rebooted. Success!

I then switched the hash and pound signs in all the sizes of the font and reloaded them. Finally, I loaded up Font Doctor and changed the name of the font from Willowdale to Pounder. I also changed the font family to 8190. I'm not too clear whether this is necessary, but it would prevent the 2 fonts from clashing if they were in the same subdirectory. A2 Central sets out font family numbers in its font issue, and I picked a number which appeared to be available.

I'm also none too sure of the copyright law on fonts. Are they in the Public Domain? Can I simply change a font slightly and rename it? Does anyone care?

At least until Claris officially releases a British version of AppleWorks GS, my clients have no excuse in paying me in peanuts rather than £s.

John R Beattie

□ Thanks for that tale of font lore! A2 Central is trying to sort out the jungle of families and numbering and have published a central register of fonts.

I also am none too sure of the copyright law either. The policy that we have taken over the publication of fonts for the Ilgs and the Apple II, is to use Macintosh screen fonts converted to the ProDOS environment. Laser fonts would be quite another matter I feel.

The Pounder font referred to by John Beattie is available on TABBS for downloading in the Apple II Font library.

Ewen Wannop



The Apple2000 Bulletin Board System

The TABBS message system is more than just a Bulletin Board. With a shopping mall where you can browse the Apple2000 catalogues and order the goods you require; a library containing over 1000 programs for the Apple II, Ilgs and Macintosh; news files update twice weekly bringing you the latest in world computer news and of course NewsBytes™; a private and public E-mail service; file transfers that can be enclosed in private or public mail; message areas covering many topics including the Apple II, the Ilgs and Macintosh; Xmodem, 1k Xmodem and Ymodem file transfers; multi-speed access at all common speeds; 24 hour operation; and much, much more make TABBS the premier Apple Bulletin Board serving Europe. Give TABBS a call today.

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```
TTTT  A  BBBB BBBB SSSS
T  A  A  B  B  B  S
T  A  A  BBBB BBBB SSSS
T  AAAAA B  B  B  S
T  A  A  BBBB BBBB SSSS
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THE APPLE 2000 USER GROUP
BULLETIN BOARD SYSTEM
V21, V22, V22BIS, V23
24 HOURS 8-N-1

```
<1> Apple ][ folder
<2> Apple Ilgs folder
<3> Macintosh folder
<4> Apple2000 folder
<5> Developers folder
<6> Public areas
```

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<D>ownload Libraries
<M>ailbox
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Medley

Dr Peter Stark takes a look at Desk Top Publishing on the IIGS

Introduction

Medley is a powerful desktop publishing program for the Apple IIGS. It combines facilities for word processing, page layout, and graphics, and has a lot of useful (and sometimes unusual) features.

With Medley, the mouse is used a good deal, to pull menus down and to make selections. The main menu headings are: 'Apple'; File; Edit; Search; Areas; Font; Format; Special Effects; and Shortcuts. Most of the options under these headings are easy to apply, though you will need to refer to the manual in your early stages of getting acquainted with Medley if you want to benefit from its full range of features. The various 'Help' screens are easy to access via an option available under the 'Apple' menu. There are keystroke equivalents to many of the mouse operations, and you can choose whichever alternative you prefer.

What is needed, and what is supplied

To use Medley, you need an Apple IIGS with a mouse and at least 1.25 Megabytes of RAM. It's best to have two 3.5" disk drives, but you can manage with only one 3.5" drive - though this is less convenient as you will need to swap disks more often. Medley is supplied as four non-protected disks: a Startup disk, a Program disk, a Dictionary disk (needed when you use the spelling checker or the thesaurus), and a Clip Art disk. These come with a large and well-written manual.

Setting up, closing, and saving documents

Starting a new document from scratch is straightforward. Alternatively, AppleWorks word processing files can be imported directly into Medley, and most of the AppleWorks formatting is preserved. This is a process which works well but has the disadvantage of being rather slow. (Just for instance: I originally prepared this review using AppleWorks: it then took over three minutes to

transfer the file into Medley!). With other Apple II word processors, you would need to save your work to disk as a Text (ASCII) file, and then import this into Medley for further treatment. This too is a fairly slow operation. Up to ten different document files can be on the desktop at a time, and it is easy to switch from the current active document to another. The procedures for closing files down, and saving them to disk, are simple.

Word Processing

As with any good word processor, it is easy to type text into Medley. The maximum length that any document can be is 32 pages. Instructions are given about how to proceed when importing text files that are longer than this. Blocks of text can be selected, and then modified in many ways. Different fonts, type styles, and type sizes can be chosen, and many combinations of these can be used within your document if you wish. By the way: the font files are stored on the Medley Startup disk. All this works well, except that there is an odd limitation with underlined text: with certain fonts, no underscore is shown on the screen when the underline option has been chosen. In such cases, the underscore does however appear in the final printed copy - except when the 'better color' mode is chosen as a printing option! The available type styles are: plain; bold; underline; italic; outline; and shadow. You can have superscripts and subscripts if you need these. Many other editing features are available with Medley. These include: 'sticky spaces'; cut, copy, and paste; find; replace; hyphenation (manual or auto; the whole document, or selected sections of text, or just individual words); kerning; and leading (line or paragraph spacing). The Undo command is also very useful, as it allows you to cancel up to 10 of the last changes which you made to the document (there is also a 'Redo' option). If you wish, horizontal and vertical rulers can be shown on screen. Four different types of tab stop can be set, and in

unlimited numbers. Another interesting function is 'Tab Leaders', which inserts a series of dots or dashes or a solid line between the point of insertion and the tab marker. Text can be made to wrap either vertically (as is usual with word processors) or horizontally. Horizontal word wrapping is useful if you want to wrap text across art areas so as to surround them and be readable across them. However, there seems to be no simple way of arranging for text to continue from one page (or page part) to another page which is separated and comes later. You can choose among 'left', 'right', 'centered', and 'full' justification of text. Page numbers (if wanted) can be located on pages in various positions and in several different styles.

With the Dictionary disk in one of the drives, the spell checker or the thesaurus can be used; these both work powerfully and easily. The spell checker suggests alternative spellings for misspelled words. You can add words to an Auxiliary Dictionary, or else to a Document dictionary which is specific to the document on which you are working. The thesaurus is another powerful feature: it provides definitions and shows synonyms for the various meanings and parts of speech which the selected word could take.

To see a reduced-size representation of your document (up to two pages at a time), you need to select the 'Show This Page' command from the Special Effects menu. However, no changes can be made while this is on screen.

Page Layout

Medley allows you to create 'art areas' in your documents; any text then flows round these automatically. An unusual and attractive feature is that these 'areas' can be of any shape you like - such as ovals, and all sorts of polygons, as well as rectangles. These 'areas' can be moved and/or changed in size, and can even be converted from one shape type into another without losing the art inside them. Borders can either be shown (and printed out) or turned off (and not printed out). If you wish, you can create 'global art' (art areas which appear in the same places on all pages of your document).

Also extremely interesting and useful is the fact that any 'art area' can be changed so that it holds text instead of art. Such text areas then behave as miniature pages, or 'Page Parts'. Text will flow from one 'Page Part' to another, in the order in which they were created.

As you will probably have realized already, by using these facilities it is easy to divide the text on any page into

two or more columns.

Graphics can be imported into art areas in Medley documents - either from the clip art disk which is supplied with Medley, or from other sources (if the files are of types "C0" or "C1"). Full details are given in the manual. Once art areas have been created, their contents can also be modified by making use of the Paint Tools facility. Several paint tools of the usual types are available (brush, fill, spray, text, pencil, straight line, 'Magnifying Glass', eraser, and various filled or unfilled shapes), as are various colours and patterns. Patterns can be edited, colours changed, and selected art flipped horizontally or vertically. There are also a Lasso and a Selection Box, which can be used much as with other paint programs. However, the Selection Box can also be used to shrink or expand chosen items of art if you wish - another nice example of the versatility of Medley.

Printing

Many of the printing options with Medley are similar to those of other IIGS-type word processors. ImageWriter printers are supported, as are LaserWriters. When using an ImageWriter and printing under the Better Text option, it is best to use a font such that a menu selection exists that is twice the size as is actually to be used in the printed document. For example: if a given font were shown on the menu as being selectable at sizes 12 and 24, creation of the document using that font at size 12 would give the best printing resolution.

The Manual

The manual supplied with Medley is some 250 pages long, clearly written, and informative. It includes an introductory 'Quick Tour', detailed descriptions of the individual features of Medley, and then a useful reference section followed by pictures showing the contents of the Clip Art disk. I found all the descriptions easy to follow. Without the manual, it would have been much harder going, and I would certainly have missed many of the useful possibilities that Medley offers.

Overall Comments

Medley (from Milliken Publishing Company) is a powerful desktop publishing program, which has a lot of good features and which I nevertheless found really quite easy to use. Its ability to create 'Art Areas' (and text 'Page Parts') of almost any required shape is particularly striking. The printed output from Medley is of an acceptable and often attractive quality, especially with careful choice of fonts and their sizes, and its speed of

printing is reasonable, even when several fonts etc. are involved.

Having spoken warmly about Medley so far, I ought also to mention its less attractive complexion: Medley is rather on the slow side. Many of its operations (text or art display; text redistribution after a change, etc.) take several seconds, and one sometimes has to wait longer. A peculiar feature is that residual fragments or text or art area occasionally linger on screen after some element of your document has been changed. However, to be fair I should add that I quickly got used to Medley's relative lack of speed, and was soon using the program quite happily. Its slowness is more a matter of needing to exercise mild patience than a real irritation.

If you have an Apple IIGS with enough memory, and are interested in desktop publishing, Medley is certainly worth consideration. It's far from being the most instantaneous of programs, but this disadvantage is offset by a range of good features such as word wrapping round (or inside!) areas of any shape, an excellent thesaurus and a good word checker, and a neat combination of word processing, drawing, and graphics. You could well feel that its capabilities make Medley an interesting possibility.

Peter Stark



Footnote:

This review first appeared in a recent issue of The Gateway Gazette (published by the Gateway Computer Club, Mildenhall, Suffolk).

info

Product: Medley

Publisher: Milliken Publishing

Available from:

MGA Softcat

Pear Tree

Appledore

Kent TN26 2AR

(0233) 83571

Price: £147.95 inc VAT

Value:



Performance:



Documentation:



FREEZE

Capture any screen in any application and make the most of your Apple IIGS®.

Press the Fingerprint button, instantly freeze the screen and enter the GSi desktop without exiting from the application. Instantly dump screens to the printer, to disk, or re-load captured screens into other applications. Press the escape key and return to the application where you left off.



In the GSi desktop, screens can be cropped, rotated, stretched, inverted, repositioned, and enlarged up to eight times original size. You can position output, set line width, automatically print page numbers, page headers, specify multiple copies, change fonts, styles, and sizes as well as image colors, and control other special printer effects. All features are available in pull-down menus.

Desk accessories in the GSi desktop include a typewriter (to type labels and add text to captured screens); a calendar with past, present and future dates; and a calculator.

The Fingerprint® GSi multifunction card plugs directly into slot 3 (or any other open slot) and is ready to use immediately. The GSi manages the two GS serial ports and an auxiliary Fingerprint serial or parallel card. The GSi will not interfere with the operation of any software or operating systems. Fingerprint models are available for the Apple IIe, IIc, and II+.

At £99.00, the Fingerprint GSi gives your IIGS the magic touch affordably.

MGA SoftCat

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TN26 2AR ENGLAND



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AppleWorks 3.0

Claris announce a major upgrade of their best selling program (From the July 89 issue of A2-Central)

We are reprinting in full the article on AppleWorks 3.0 from the July edition of A2-Central.

AppleWorks is the single most important program for the Apple II series. Version 3.0 is a major upgrade based on actual users' wishes.

This article is reprinted with the kind permission of our friends at A2-Central. Ed.

AppleWorks 3.0 a Blockbuster

Imagine what would happen if Claris asked Beagle Bros to make all the enhancements to AppleWorks that users had ever dreamed of. Now stop imagining. It's reality.

Claris announced AppleWorks 3.0 at the National Educational Computing Conference in Boston on June 20. Alan Bird, originator of Beagle Bros' TimeOut utilities and author of TimeOut QuickSpell, Randy Brandt, author of TimeOut UltraMacros, and Rob Renstrom, author of TimeOut Graph, have been at work on the AppleWorks 3.0 project since last summer.

Imagine a 16,000-line word processor with a new, more-advanced version of QuickSpell built-in; with real tabs and multiple tab rulers; with multi-line headers and footers; with more control-key commands (such as control-C for center); with the ability to print a specified range of pages; with the ability to print date and time codes (in a selection of formats); with right-justification; and with six new printer codes you can use to take advantage of whatever special features your printer supports.

Imagine a 16,000-record data base with horizontal scrolling in multiple-record layout; with multiple category sorts; with single category finds; with one-key entry of the current date and time; with 20 report formats per file that include new abilities such as multiple labels across a page and the ability to create multiple-record screen formats from report formats and vice-versa.

Imagine a 9,999 row by 127 column spreadsheet that is smart enough to determine whether a cell being referenced is a label or a value and act accordingly. Put (A2) in a cell and it will

display "1" if that's what's in cell A2 or it will display "Wow!" if that's what's in cell A2. Imagine being able to turn numeric scores into letter grades and numeric cross-checks into verbal error messages. Imagine five new arithmetic functions like @LOG and @MOD, nine new trigonometric functions like @SIN and @ACOS, six new financial functions like @PV and @IRR, and six new logical functions like @TRUE and @ISERROR. Imagine @IF(@ISBLANK(A2),"You must fill in cell A2",""), to say nothing of the ability to copy and move blocks of cells to and from the clipboard.

Imagine a clipboard with no size limit other than the amount of memory you have. Imagine a clipboard with the ability to automatically format the data it contains for any AppleWorks module. Yes, you can move data from any module to any other module—from the spreadsheet to the word processor, for example—without first printing it to the clipboard or a file on disk.

Imagine being able to select subdirectories, as well as files, using point-and-shoot rather than try-and-re-member—even when accessing ASCII text files. Imagine being able to switch drives and to dive into and back out of subdirectories by pressing keys while the current file listing is on the screen.

Imagine up to three custom printers, not just one, and built-in support for Brother, Epson, Juki, Okidata, and Panasonic printers, to say nothing of the ImageWriter II and the ImageWriter LG.

Imagine automatic support of aux-slot type memory cards (in addition to current support for standard-slot and IIGs-memory-slot cards). Imagine no retail price increase. Imagine an upgrade price of \$79 and a special Claris program whereby A2-Central subscribers who don't have an older copy of AppleWorks to upgrade from can get AppleWorks 3.0 directly from Claris for \$99.

(NAUG members may also take advantage of this offer. In both cases payment must be accompanied by the special coupon inserted in the July editions of A2-Central or AppleWorks Forum. The list price of AppleWorks 3.0 is \$249. No announcement from

Claris UK has been made yet of the price or availability in the UK. Ed.)

APPLEWORKS 3.0 STILL WORKS ON 128K MACHINES, however, as before, it works better on machines with additional memory. Desktop size on 128K machines is now about 40K instead of 56K.

AppleWorks 3.0 comes on two double-sided 5.25 disks or one 3.5 disk. Side 1 of the 5.25 startup disk includes PRODOS, APLWORKS.SYSTEM, four files for various kinds of memory expansion cards, a configuration file, a printer information file, and the SANE mathematics file. Side 2 of the 5.25 disk set includes the word processor and data base segments. Side 3 has the spreadsheet. Side 4 has the main and custom dictionaries for the spelling checker. Sides 1, 2, and 3 also all have a file called SEG.AW, which holds the desktop and main menu segments.

Here's a complete list of the AppleWorks 3.0 program files:

filename	size (blocks)
description	
PRODOS	32
disk operating system	
APLWORKS.SYSTEM	26
main program file	
SEG.00	9
memory segment for 128K	
SEG.AM	9
for aux-slot memory	
SEG.XM	9
for std-slot memory	
SEG.RM	9
for IIGs memory	
SEG.EL	12
SANE elementary math functions	
SEG.PR	6
Configuration file	
SEG.PR	9
Printer information	
SEG.AW	97
Desktop Interface and Main Menu	
SEG.WP	87
word processor	
SEG.DB	86
data base	
SEG.SS	76
spreadsheet	
MAIN.DICTIONARY	402
(5.25 version is 254 blocks)	
CUST.DICTIONARY	1+
(expands as you add words)	

It's possible to create minimum-configuration disks that don't include all of these files. You need only the one memory segment file (SEG.00, SEG.AM, SEG.XM, or SEG.RM) that will be used by your machine. If you don't use the spreadsheet, you don't need SEG.SS; the data base, SEG.DB; the word processor, SEG.WP nor the dictionaries. And after you've configured your printers you no longer need SEG.PR. (Under AppleWorks 3.0, SEG.PR contains the list of supported printers, as dis-

played when you add a printer, and all the printer control codes and sequences for those printers. Unlike earlier versions, it doesn't contain any variable configuration information about printers—that's been moved to the new SEG.ER, along with other configuration information. Third parties can now construct special SEG.PR files holding information for additional printers.)

Desktop Enhancements

AppleWorks 3.0 now has a single standard interface for dealing with files on disks, which has the following features. Whenever a list of disk files is displayed on the screen (except when selecting custom dictionaries, which must be at the same directory path as the AppleWorks program files), the following keys can be used to navigate through directories ("OA" means hold down the open-apple key):

- TAB** AppleWorks reads and displays the root directory of the next drive.
- OA-** (note: unshifted OA->) adds highlighted subdirectory to pathname and displays the subdirectory's contents (same as Return).
- OA-** (note: unshifted OA-<) deletes last subdirectory from pathname and displays prior subdirectory. Beeps in root directory.
- OA-RETURN** Selects current pathname and returns to previous menu.
- ESCAPE** Returns to previous menu without changing pathname.
- RETURN** With files selected: loads selected files. With no files selected: File highlighted: loads the file. Subdirectory highlighted: same as OA-.
- Right/Left** Select and deselect files as before; beep if on subdirectory.
- Up/Down** Move cursor up and down through directory listing, as before.
- OA-Up/Down** Page up, page down.
- OA-1/OA-9** Top of list, bottom of list (OA-2 through OA-8 do nothing).

There are seven ways to display lists of files on disk from within AppleWorks 3.0. No matter what order the files are actually in on the disk, in the AppleWorks file listing they are grouped in the following order: word processor files, data base files, spreadsheet files, text files (well, text files are listed first when you "Make a new file" from a text file or a DIF file), other files, and subdirectories. Within groups the files are listed alphabetically.

All six types of files are displayed when you "List all files on the current disk drive" or "Delete files from disk" (Other Activities menu), when you "Make a new file from a DIF file" (data base and spreadsheet), and when you "Make a new file from a text (ASCII) file" (word processor and data base—as with earlier versions of AppleWorks, you can actually use this command to load any type of file into AppleWorks, not just text files, but you can only load one file at a time).

When you "Get files from the current disk", only AppleWorks files and subdirectories are displayed. When you select a custom dictionary, only text files are displayed (the dictionaries have to be at the same pathname as the rest of the AppleWorks program). When you "Change Current Disk" using "ProDOS directory", only subdirectories are displayed (if you insist, you can also type in pathnames the old way by selecting "ProDOS directory" with OA-Return). AppleWorks 3.0 no longer supports "Make a new file from a Quick File file" (data base) or "Make a new file from a VisiCalc file" (spreadsheet).

With the new commands, there's almost no reason to ever use choice 2 from the "Add files" menu ("Get files from a different disk"). Always select "The current disk" and if it's not the one you really want, use Tab to quickly display the one you do.

Enhanced text file importing/exporting. Now that the word processor supports true tabs, more options are available for importing and exporting files. When you import a text file to the word processor, any embedded tabs (Control-Is) will be converted to AppleWorks tabs. When you import a text file to the data base, AppleWorks 3.0 asks:

- Does the text (ASCII) file have:
1. Tabs between categories, Returns between records
 2. Return after each category

If you select 2, AppleWorks will ask how many categories there are per record, just as it does now. If you select 1, however, AppleWorks will be able to determine that itself and will skip the question.

When printing to a text file from the word processor, the following menu appears:

- Should the text (ASCII) file have:
1. Standard text format with Tabs
 2. Spaces substituted for tab stops
 3. Returns after each line

Option 3 is the equivalent of the way current versions of AppleWorks print text files. Option 3 gives you a Return at the end of each line and embedded spaces rather than tabs. It's ideal for creating text files you intend to upload to an online service.

Options 1 and 2, on the other hand,

don't add Returns to the file. Returns appear only where they are in the original file, which is usually only at the end of paragraphs (this is how early versions of AppleWorks printed text files). Option 1 puts control-Is in the file; option 2 puts the correct number of spaces. Which is better depends on whether the software you're sending the text file to recognizes control-Is or not.

When printing to a text file from the data base, the following menu appears:

- Should the text (ASCII) file have:
1. Tabs between categories, Returns between records
 2. Return after each category

And when printing to a text file from the spreadsheet, you'll see:

- Should the text (ASCII) file have:
1. Tabs between columns, Returns between rows
 2. Return after each cell

(The AppleWorks 3.0 specifications also say that new subdirectories and exported text and DIF files will be created in the current data disk location unless the user enters a complete pathname. In previous versions, the user was forced to enter a complete pathname—a partial pathname wouldn't do. Based on the pre-release version of 3.0 Claris gave me to look at, this new feature wasn't implemented.)

Smart Save Command

When an AppleWorks file (but not a text or DIF file) is loaded from disk, AppleWorks will remember the pathname the file was in. OA-S still saves a file to the current disk location, as before, however, OA-Control-S now sets the current disk location to the file's original pathname and then saves the file.

When you use the main menu's Save Files option, AppleWorks 3.0 gives you a third option in addition to "Save the file on the current disk" and "First change to a different disk or directory". That option is "Save the file to its original directory." If the original directory can't be found because the user has switched disks, the "Getting errors trying to write at..." filecard will appear. It allows the user to insert the correct disk and then "Try again" or to "Try a different location."

Clipboard Enhancements

Three enhancements were made to the AppleWorks 3.0 clipboard. First, the only limit on the size of the clipboard is the amount of available memory. Second, you can now copy and move spreadsheet columns and blocks to and from the clipboard (formerly you could only deal with entire rows). When copying or moving spreadsheet data back into a spreadsheet, the data on the clipboard over-

writes pre-existing data.

The third clipboard enhancement allows you to use the clipboard to transfer data directly between the word processor, data base, and spreadsheet. When transferring data between the spreadsheet and the data base, spreadsheet rows are equivalent to data base records and columns are equivalent to categories.

When copying or moving data base or word processor data from the clipboard to the spreadsheet, new rows are inserted for each record or line. The data will start in column A. If there are no Tabs in word processor text, each whole line will be placed in a single cell in column A. If there are Tabs, additional cells will be used for each Tab. Numbers in data base categories or between word processor Tabs will be converted to numeric values.

When copying or moving spreadsheet or word processor data from the clipboard to the data base, new records are inserted for each row or line. The data starts in the first category. If there are more columns/Tabs than categories, the excess will be ignored; if less, the remaining categories will be blank.

When copying or moving spreadsheet or data base data from the clipboard to the word processor, Tabs are automatically inserted into the text to separate columns/categories. Returns at the end of each line separate rows/records.

Other Desktop Changes

Some other changes in AppleWorks 3.0 include the following: the program no longer asks the user to press the space bar after display of the title/copyright screen during startup. If the system has a clock, AppleWorks 3.0 will read the system date during startup and not ask the user to enter the date.

OA-Delete now deletes the character the cursor is on (or gobbles characters to the right of the cursor) in all parts of the program. Delete alone works as before. OA-right-arrow and OA-left-arrow move the cursor to the first character of the next word, right or left, in all parts of the program. When Control-Reset is pressed, AppleWorks 3.0 tries to return to the main menu rather than dropping into the Monitor.

"Thermometers" similar to the one displayed while GS/OS is booting are used in AppleWorks 3.0 to indicate how quickly time-intensive tasks such as preloading files, sorting, printing, and searching dictionaries are moving along. A warning message appears whenever a duplicate filename is added to the desktop (the message appears in current versions only when adding a new file from disk; under 3.0 it will also appear when making a new file from scratch or when renaming a file.) Users can now print up to 255 copies of a file. And the

OA-H(ardcopy) command now issues a form feed to advance the paper after printing what's on the screen.

Word Processor Enhancements Spelling Checker

The new built-in spelling checker is accessed by pressing OA-V(erify spelling). This brings up the following one-line menu at the bottom of the screen:

Verify spelling? All Word Block
Dictionary Options

"All" checks the spelling of the entire document. "Word" checks the spelling of the word the cursor is on, or the word to the left of the cursor if it's between words. "Block" allows the user to select a block of text and then checks the spelling of all the words in that block.

"Dictionary" brings up a second menu that looks like this:

Custom Dictionary? Get existing
Create new

Each time you start up AppleWorks 3.0, the configuration file is used to determine the name of the default custom dictionary. The first option allows you to switch from the default custom dictionary to another one. The second option allows you to create a new, empty, custom dictionary and start using it. Dictionaries selected using the "Dictionary" option remain in use through the current session. The next time the user runs AppleWorks, however, the custom dictionary listed in the configuration file, which we'll look at later, is reselected.

In addition, each time you start up AppleWorks 3.0, the configuration file is used to determine whether you want to check spelling "in context" or "from a list", to determine whether you want a summary of the spelling changes you've made, and to determine whether you want your summary displayed on the screen or placed on the clipboard. (You can also choose to get the summary only without stopping to correct anything; this option was added so that teachers could quickly check homework on-disk.)

The "Options" selection in the "Verify spelling?" menu allows you to select the alternate checking method or alternate summary options for the current spell-check. (Your method/summary selections are good one-time only and only if you select "All" or "Block" immediately after making the selection. Escape back to your document and you'll lose the selection. "Word" verifications are always in context and never include a summary.)

When you verify spelling in context, AppleWorks proceeds through the document stopping at each unknown word in the order in which they occur.

The document will be displayed on the screen with the unknown word highlighted in approximately the center of the screen. At the bottom of the screen you'll see the following menu:

Unknown word? Replace Add to dictionary Ignore Skip Get suggestions

"Replace" allows you to type in a correction. First you'll have to specify whether the correction applies only to that instance or to all occurrences of the unknown word. "Add to dictionary" adds the unknown word to the current custom dictionary. "Ignore" skips all occurrences of the unknown word. "Skip" skips just that one instance of the unknown word. "Get suggestions" brings up a list of possible correct spellings for the unknown word. You can scroll through this list and replace the unknown word with the highlighted word by pressing Return.

When you verify spelling from a list instead of in context, you are presented an alphabetical list of all the unknown words in the document. You can use the four arrow keys to scroll through and select some or all of the words in this list. Selected words can be added to the dictionary (OA-A), ignored (OA-I), or replaced by typing in a correction (OA-R). You can also choose to correct selected words in context (OA-C), which is how you get the program to give you suggested spellings for the unknown words in the list.

No matter which method you use, after you've dealt with all the unknown words, you'll be presented with an in-context display of all double double word pairs and you'll be given an opportunity to remove one of the duplicates. When verifying from a list, you can delete double words anytime by pressing OA-D.

Looking only at spell-checking methods, AppleWorks 3.0's built-in spelling checker is almost a twin of TimeOut QuicksPELL. The spelling summary, on the other hand, is a new feature that TimeOut QuicksPELL doesn't have.

The spelling summary is displayed on the screen or placed on the clipboard after you've finished checking a document. Here's a summary for the file "Tax Estlmtr.Doc," which is a sample file from the National AppleWorks User Group that's included on the AppleWorks 3.0 disk:

Total words:	648
Unknown words:	5
Corrections made:	1
Unknown word	Correction Count
2a	2
2b	2
documentation	documentation 1
estimator'89	1
vincenti	<ADDED TO DICT> 1

"Total words" is a count of all the words in the document. Words that appear more than once are counted each time they appear. "Unknown words" shows how many unique, unknown words are in the document (this time words that appear more than once are counted just once); a list of these words and what action was taken with each follows. "Corrections made" shows how many of the unknown words were corrected. The list that follows shows each unknown word; whether it was corrected, added to the dictionary, or ignored/skipped; and a count of how many times it occurred in the document.

As mentioned earlier, you can configure AppleWorks to skip the summary completely, to have it appear on the screen, or to have it placed on the clipboard. And you can also configure it to immediately display the summary on the screen without stopping to allow you to make corrections. As shipped, AppleWorks 3.0 is configured for no summary, in context checking, and a supplied custom dictionary called CUST.DICTIONARY.

OA-Options Menu; Control-Key Commands

While the addition of a spelling checker is significant in itself, a number of other enhancements were also made to the word processor. An extra line was added to the already crowded OA-O(ptions) menu, which allowed the addition of four new options. The added options are RJ (right justification), PD (print date), PT (print time), and SC (special code).

The addition of right justification finally gives AppleWorks a complete set of justification options. The others are UJ (unjustified or left justification), JU (full justification), and CN (centered). In addition, all four of these options can be inserted in a document with control-key commands: control-N (normal or left justification), control-F (full justification), control-R (right justification), and control-C (center).

Two additional control-key commands have been added to AppleWorks 3.0 (beyond control-B for boldface on/off and control-L for underline on/off, which are in current versions). They are control-P (page break), which has the same effect as the NP (new page) printer option and control-A (add-on), which inserts a formatting token that can be used by add-on software such as the TimeOut series. The following chart shows the complete list of AppleWorks 3.0 word processor control-key commands:

control-B boldface on/off
control-L underline on/off
control-N normal (left) justification
control-F full justification
control-R right justification
control-C center

control-P page break
control-A add-on token

The print date and print time options insert the current date or time into a document as it is being printed. They work in much the same way as the PP (print page number) printer option. Like PP, they are displayed as carets on the screen. The format of dates and times is configurable within AppleWorks 3.0, as we'll see in detail later; these options print the user-selected format.

The SC (special code) option allows you to insert one of six user-defined printer codes into a document. These are also displayed as carets on the screen. As in current versions of AppleWorks, a description of what a caret represents appears in the center of the bottom line of the screen when the cursor is on a caret. Even this description is user-definable for the six special codes. The codes can be used to turn on features some printers may have that AppleWorks doesn't otherwise support, such as alternate character sets (italics or foreign languages). Or they can be used for accents (for example, define a special code as "control-H ^"—control-H is the backspace command for most printers—and use it to put a caret over the preceding letter.)

Real Tabs

The addition of real tabs to the word processor has allowed a number of enhancements to AppleWorks 3.0, as seen earlier in the discussion of text file import and export options. Moreover, "real tabs" mean that pressing the Tab key no longer inserts spaces into a document; it now inserts a "tab token". When you adjust tab settings, the position of tabbed text in your document changes to match the new tab settings. This allows you to move whole columns of text right or left simply and easily. It also means the Tab key can now reposition text rather than just reposition the cursor. (OA-Tab in the word processor works like Tab alone did in previous versions. There is now no way to back-tab in the word processor.)

Different parts of a document are allowed to have different tab settings through the use of tab "rulers". When you press OA-T(abs), you get a new prompt that looks like this:

Tab ruler? Modify current Create new

The "Modify current" choice allows you to change tab stops on the current ruler as in current versions of AppleWorks. The "Create New" choice gives you a new ruler, which initially has the same stops as the current ruler, and then allows you to modify the stops as you like. A ruler is in effect from the paragraph following the ruler until either a new ruler is defined or the end of the document.

The tab display at the top of the screen always shows the settings of the current ruler—as you move the cursor through a document the display will change when you pass rulers, which, if you use OA-Z(oom), look like this:

—Tab Ruler

Like any other printer option token, tab ruler tokens can be copied, moved, or deleted. However, the first tab ruler in a document doesn't have a token. To copy the first ruler you have to make a duplicate of it by pressing OA-1 to go to the top of the document, OA-T(abs), "Create New", and Escape. This creates a copyable token of the first tab ruler.

Four kinds of tab stops are available: left, center, right, and decimal. A normal, left-justified tab appears in the tab display at the top of the screen as a "<". Think of the point of the less-than sign as representing the tab stop and the arms as representing where the characters will go. A centered tab appears as "^". A right-justified tab appears as ">". A decimal tab appears as "."; decimal tabs line up a column of numbers on the decimal point, as shown in the following table:

symbol	kind	effect
<	left	<—stop is here
^	center	text centers
>	right	stop is here—>
.	decimal	\$99.95

When a new word processor file is created from scratch or a file from an older version of AppleWorks is added to the desktop, initial tab stops appear every five spaces. All are left justified.

Multi-Line Header and Footers

The OA-O(ption) HE (page header) and FO (page footer) commands now insert two printer codes each into your document, a begin code and an end code. Any printer options or text entered between the codes will be used as the header or footer. Headers and footers can have any reasonable number of lines (more than half a page isn't reasonable). When copying, moving, or deleting headers they must be treated as a block, however, users can copy/move/delete parts of text and formatting that is between begin and end markers.

Other Enhancements

The print menu now looks like this:

Print from? Beginning This page
Cursor Page to page

If you select the new "Page to page" option, you'll next be asked to select a printer. After that you'll be asked for beginning and ending page numbers. You'll know what page numbers you want to print, of course, because you'll be smart enough to OA-K(alculate page numbers) and see before you try to print.

OA-Z(oom) has been changed slightly so that all printer options, including headers, footers, and most carets, are hidden in zoom-out mode. Zoom-in shows everything, as before.

Placing a Boldface Begin or Underline Begin at the beginning of a document and not matching it with a Boldface End or Underline End will boldface or underline the entire document.

When using the Copy and Move commands, line numbers are no longer removed from the bottom of the screen.

On machines with more than 256K of memory, the maximum number of lines in a word processor document is more than 16,000.

As mentioned earlier, OA-Delete removes the character the cursor is on. OA-right/left arrow moves the cursor to the first character of the next word to the right or left. In addition, the unshifted forms of OA-< and OA-> (actually OA-, and OA.) move the cursor to the beginning and end of the current line.

Data Base Enhancements

The Multiple-Record Layout in the AppleWorks data base has been greatly enhanced by adding horizontal scrolling, left-side titles, and selectable user-defined layouts.

The multiple-record layout now scrolls horizontally much like the spreadsheet. The unshifted forms of OA-< and OA-> move the cursor to the left and right edge of the document. OA-right/left-arrow move the cursor to the left and right edge of the screen. (The functioning of these key combinations in the spreadsheet and word processor is identical, with the exception that in the word processor OA-right/left-arrow moves the cursor one word at a time rather than one screen at a time.) As in the spreadsheet, you can force the left-most categories to stay on the screen during horizontal scrolling by setting titles. The command for this is OA-T(itles). When you press OA-T, the cursor must be to the right of (rather than on top of) the categories you want stuck on the screen.

When you press OA-L(ayout) from a multiple-record layout, you get a new menu that looks like this:

1. Change the existing record layout
2. Get a layout from a report format

(If no report formats have been defined, this menu doesn't appear.) If you choose to get a layout from a report format, you're next presented a list of available formats. Select one, tell AppleWorks whether you want the cursor to go down or across when you press Return, and your multiple-record display changes to match that of the report format. This gives you an easy way to flip between different

multiple-record "views" of your data.

Likewise, when you tell AppleWorks you want to create a new "tables" report format for printing, you'll see a new menu that asks:

Create a new "tables" format:

1. From scratch
2. From the current record layout

If you select 2, all the layout work you've done in multiple-record format will be transferred to your new report format. Further modifications are possible if you desire.

You can now have up to 20 report formats per file, instead of just 8 as before. If you are working with a labels-style format, the OA-O(ptions) command in the data base now includes an item called "columns" at the bottom of the "left and right margins" section. This allows you to print several labels across a page. You can specify any number between 1 and 24, although anything over 5 makes for a very narrow label.

The OA-F(ind) command now displays the following menu:

Find text? Anywhere In a specific category

"Anywhere" produces a search just like the one current versions of AppleWorks do. If you select "In a specific category", you'll be presented a list of categories in the file and allowed to select just one. This allows you to find your clients named "Smith" without finding your clients who live on "Blacksmith Road", or who live in "Smithsville", or who work for the "Smithsonian".

The OA-A(rrange) command now displays the following menu:

Arrange (sort) on? Category
(nnnnnnnn) Several categories

In the position where I put "nnnnnnnn" in this example you'll actually see the name of the category the cursor was on when you pressed OA-A. Selecting that produces a sort you'll recognize from current versions of AppleWorks. If you select "Several categories" instead, you can select up to three and an arrangement order for each. The screen resembles the OA-R(ecord select) screen while you do this. As you would expect, the sorts are done in reverse order from the way you select them, so that the last sort is done on the first category you select. For example, if you select the "city" category and then the "last name" category from a mailing list data base, the final arrangement will be by city, with records sorted by name within the city groups.

Other Enhancements

After pressing OA-L(ayout) in single-record format, you can now press OA-T(itles) to make category names appear in inverse.

If you enter a "@" in a date field or a time field and press Return, AppleWorks will replace it with the current date or time.

On machines with more than 256K of memory, the maximum number of records in a data base document is now more than 16,000.

Spreadsheet Enhancements

The two primary enhancements to the spreadsheet in AppleWorks 3.0 are the addition of a large number of new functions and the ability to reference text in formulas.

There are 26 new spreadsheet functions. Here's a complete list:

Arithmetic functions

@MOD(number,divisor)
Returns the remainder of:
number divided by divisor.
@PI
Returns 3.1415927

@EXP(number)
Returns e raised to the power of number
@LN(number)
Returns the natural logarithm of number
@LOG(number)
Returns the base 10 logarithm of number, called @LOG10 by some other spreadsheets.

Trigonometric functions

@DEG(number)
Converts number, which is an angle in radians, to degrees.
@RAD(number)
Converts number, which is an angle in degrees, to radians.
@COS(number)
Returns the cosine of number, which is an angle in radians.
@ACOS(number)
Returns the angle in radians whose cosine is number.
@SIN(number)
Returns the sine of number, which is an angle in radians.
@ASIN(number)
Returns the angle in radians whose sine is number.
@TAN(number)
Returns the tangent of number, which is an angle in radians.

@ATAN(number)
Returns the angle in radians whose tangent is number.
@ATAN2(x-number,y-number)
Returns the angle in radians whose x and y coordinates are x-number and y-number.

Logical functions

@TRUE
Returns the value true (1)
@FALSE
Returns the value false (0)
@NOT(number)
Returns false if number is true and vice-versa

@ISBLANK(ref)

Returns true if cell (ref) is empty, else false

@ISERROR(ref)

Returns true if cell (ref) is "ERROR", else false

@ISNA(ref)

Returns true if cell (ref) is "NA", else false

Financial functions

@IRR(range,guess)

Returns the internal rate of return of the cash flow in range. @IRR uses iteration. It repeats the calculation until the values converge. If they don't converge after 20 iterations the function returns an error. In this case, try a different value for the guess parameter.

@FV(rate,term,pmt[,pv,type])

Returns the Future Value of a series of equal payments when the interest rate per period, number of periods, and payment are known. The optional pv parameter in brackets allows you to give a beginning value to the cash flow (defaults to zero if not specified). The optional type parameter specifies whether payments occur at the beginning (1) or end (0) of the period (defaults to zero).

@PV(rate,term,pmt[,fv,type])

@TERM(rate,pmt,pv[,fv,type])

@PMT(rate,term,pv[,fv,type])

These functions return Present Value, Term, and Payment of a series of equal payments. You must know the interest rate per period and two of the values to calculate the third. The optional fv parameter allows you to give an ending value to the cash flow. See @FV for an explanation of the type parameter.

@RATE(term,pv,fv)

Calculates the interest rate of a lump sum transaction when the Term, Present Value, and Future Value are known. The Term, Present Value, and Future Value of lump sum transactions can be calculated using the other financial functions with Payment set to zero. The interest rate of a transaction involving a series of payments can't be determined by formula—don't try to use this function to do it.

If you're interested in more information on how the financial functions work, a little book called *Your Best Interest*, by yours truly, is a great place to learn. (\$9.95: IB-001).

Other Enhancements

As mentioned in the section on the clipboard, blocks of spreadsheet data can be copied and moved to and from the clipboard with AppleWorks 3.0. Print All now prints as many columns as it can on the first page, then prints the next group of columns, then the next group of columns, until all columns are printed. In earlier versions, printing stopped after the first group of columns. When copying "Within worksheet", the user can press OA-Return to select either "No change" or "Relative" and AppleWorks will copy all subsequent cell references in that manner without asking again. OA-N or OA-R also work for this. The maximum number of rows in the spreadsheet is 9,999 on machines with 256K of memory or more.

New Configuration Menu

In earlier versions of AppleWorks, items 6 and 7 on the Other Activities menu were "Select standard location of data disk" and "Specify information about your printer(s)". In AppleWorks 3.0 these have been replaced by an item that reads, "Select standard settings for AppleWorks".

The "Standard Settings" file card includes the following items:

1. Change preloading
2. Select standard Spelling Checker settings
3. Change date format
4. Change time format
5. Select standard location of data disk
6. Specify information about your printer(s)

Item 1 allows the user to select which modules (word processor, data base, spreadsheet, none, any two, or all) will be loaded into memory when AppleWorks starts up. The more modules you preload, the longer it takes and the more desktop memory you use up. On the other hand, you can switch from one preloaded module to another very quickly. The default preload for 5.25 disks is "none" and for 3.5 disks it's "all."

Item 2 allows you to configure the spelling checker. There are three configuration options—name of the custom dictionary, standard spelling method ("In context" or "From a list"), and standard summary setting ("No summary", "Put summary on clipboard", "Put summary on screen", and "Screen summary only; don't correct spelling"). Defaults are CUST.DICTIONARY, "In context", and "No summary".

Item 3 allows you to select a date format that will be used throughout AppleWorks. Here's the date selection menu:

1. Mon DD, YYYY (April 11, 1988)
2. MM/DD/YY (4/11/88)
3. DD Mon YYYY (11 April, 1988)
4. DD/MM/YY (11/4/88)

With the options that spell out the month name (1 and 3) the year won't be displayed if it hasn't been specified. Slashed dates must have a year—the current year will be used if none is specified. In data base date fields, month names are abbreviated to three characters no matter which format you choose here. However, items 1 and 2 put the month first in data base date fields, items 3 and 4 put the day first. The default setting is number 1.

Item 4 allows you to select a time format. The default is AM/PM format. Here's the time selection menu:

1. AM/PM twelve hour format
2. Twenty-four hour format

Item 5, "Select standard location of data disk", is unchanged from current versions of AppleWorks.

Item 6, "Specify information about your printer(s)", works much like before but includes several new options. As mentioned earlier, the SEG.PR file that comes with AppleWorks 3.0 contains information for more printers. Here's a complete list:

Apple

Daisy Wheel, Dot Matrix, ImageWriter, ImageWriter II, ImageWriter LQ, Scribe, Silentype

Brother

HR10, HR20, HR25, HR35

Epson

MX, MX/Graftrax+, FX, RX

Juki

5500 series, 6100, 6200, 6300, 6500

Okidata

192, 193, 82A, 83A, 84, 92, 93

Panasonic

1080, 1091, 1092

Qume

Sprint 5, Sprint 11

If this list isn't long enough, AppleWorks 3.0 allows you to have three custom printers, not one as in earlier versions. But even better than that, 3.0 allows you to customize the codes of built-in printers, as well. This means you could add an ImageWriter II to your list of printers and then change just the codes for boldface begin and end. You wouldn't need to enter a long list of new codes for your custom printer's other options as you do with current versions.

But beyond even that, you now get six Special Printer Codes. These codes are selected in the word processor using the new OA-O(options) SC (special code) feature mentioned earlier. Six distinct special codes can be saved for each printer, however, only one set of names for the codes can be saved. The names appear at the bottom of the word processor screen when you put the cursor on a Special Codes caret. Using the Special Codes, you no longer have to give up boldface

to get italics, and so on.

AppleWorks 3.0's underlining powers have been strengthened. It can send the correct underlining codes to any printer that has underlining abilities.

When entering printer codes, the "end of code" key is now OA-Return instead of the caret. This means all 128 ASCII characters can now be entered and used as printer codes.

New File Formats

AppleWorks 3.0 can read and write files created on earlier versions of AppleWorks. However, because of the new features in AppleWorks 3.0, older versions of AppleWorks will not be able to read files created by AppleWorks 3.0 if new features are used. If new features are not used, however, AppleWorks 3.0 saves files in the old standard format.

Files will be saved in the new format when the following features are used:

Word Processor

One or more tab characters

Any type of tab other than left justified

Multiple tab rulers

Headers or Footers

Any of the new OA-O(ptions)

Right Justify

Print Date

Print Time

Special Codes

More than 7,250 lines

Data Base

Using more than 8 report formats

More than 6,350 records

Spreadsheet


Any new function

Any formula that returns a label

The use of literal strings ("for example") in functions


Data below row 999

The new file formats will be made available to developers.

Claris reports that more than 750,000 copies of AppleWorks have been sold and that AppleWorks and AppleWorks GS own 40 per cent of the market share for integrated microcomputer software. 

We have reviews of AppleWorks 3.0 organised, and shall be bringing you these reviews as soon as possible. At the time of writing AppleWorks 3.0 has not yet been shipped.

Owners of TimeOut utilities will require an upgrade to AppleWorks 3.0. They should get this from their local Beagle Buddy. MGA in Kent is our local Beagle Buddy for the UK, and you should contact Jon Gurr in due course.

Beagle Brothers have also acquired the rights to all the old StyleWare products except for AppleWorks GS of course. They will be re-released shortly in new packaging. Ed 

Hotline News



Assemblers

Members from time to time request information on assemblers for the Apple // family and books on assembly language to assist them. For Apple IIgs users this magazine contains a review of the latest version of Merlin which is now in the Merlin 8/16 package and titles Merlin 16+. Merlin 16+ runs under GSOS and ProDOS 16.

Assemblers for the Apple II computer were available virtually from the inception of the machine; indeed it came with its own, courtesy of Steve Wozniak, 'mini assembler' in ROM. I actually still use the 'mini assembler' in the ROM of my Apple IIgs for writing very small programs and I am sure that many others do, too. The 'mini assembler' isn't a real assembler since you can't use labels.

Real assemblers for the Apple II computer followed the 'boot-strap' course. The first were written in Integer BASIC and later these assemblers would be used to re-write themselves to give, mainly, a speed advantage. One of the first of these assemblers was Merlin, written by Glen Bredon, published by Roger Wagner's company. This original Merlin is still available and is the only one of the Merlin family that will work on the Apple II plus computer and will still work on all later Apple // computers, too. This version is stocked by MGA Microsystems at £59.95 + postage. Another assembler for the Apple II plus is the Microsparc assembler by Alan and Valerie Floeter and available from MGA at £49.95. Microsparc is the software arm of Nibble magazine. There were many other assemblers available during the day of the Apple II plus but I couldn't find any of them still in publication, now.

Books that might help

Over the years many good books on assembly language programming and programming the 6502/65816 have been published. Some specialist magazines have become available, too; in particular one by Bob Sander Cedelof author of the SC assembler which is available to purchasers of his assembler. Most assemblers come with a manual that, hopefully, describes the use of the product but does not give much information on programming. Here, then is a partial list of books available with some comments:-

Programming the 6502 — by Rodney Zaks

This book describes, in quite some

detail, the 'instruction set and addressing modes of the 6502 microprocessor in all classical Apple // computers'. The last half of the book is used to describe sub-routines that many users might require. There are many other similar books by other authors.

Programming the 65816 — by David Eyes and Ron Lichty

Like the above this book describes the full instruction set of the 65816 but includes the 65802, 65C02 and 6502 which use a subset of the 65816 instruction set. Sample sub-routines and the code for a debugger are included.

65816/65802 Assembly Language programming — by Michael Fischer

This book is somewhat similar to the above in that it covers the instruction set and addressing modes of the two microprocessors. Many programming sub-routines are included.

All these books are very good references and conveniently contain different sub-routine examples.

Books aimed to teach beginners the art of Assembly language programming are not so common. The two main ones are:-

1) Assembly Lines by Roger Wagner which is a compilation of articles by the author in Soft Talk magazine. This book and the articles make excellent reading for all classic Apple // users; even Apple IIgs users will benefit.

2) Apple IIgs Machine Language for beginners by Roger Wagner. A review of this excellent book appears elsewhere in this magazine.

This list cannot hope to be complete and any feedback from members would be welcomed.

Making it all work

Hang ups! When your program unexpectedly 'hangs' check your printer first. Quite often hanging programs will be waiting for a handshake from your printer and as no message appears printer problems are not always obvious. This problem occurs quite often even with programs that you wouldn't expect to be trying to access the printer!

No program can be sure of being free from bugs when you first run it. Get to think laterally, it will never be the obvious that is the cause of a persistent bug. The most common problem is overlapping variables. Be careful and do not use offsets from a single variable unless you keep careful track of what you have done.

Add copious remarks to your assembly listings, this way you will remember what you did when you look at the listings later.

Dave Ward 

SoftCat Corner

PRICING REGULATIONS

Vernon Quaintance's letter on page 3 of the June issue of Apple2000 regarding consumer pricing is spot on! MGA SoftCat pioneered truly-inclusive pricing policies in the Apple II market back in '87 with the inception of "WYSIWYP" - an acronym meaning "What You See Is What You Pay", (with acknowledgement to Iain McHugh for helping me smooth the expression into a more familiar-sounding word). I think companies selling to the public, (as most do), should consider being more realistic. After all; it's all very well offering a product at £859.57 + VAT (excluding delivery), but the truth for consumers is actually £1000.00 (after adding £10.00 delivery and 15% VAT).

FOREIGN FONTS (ad infinitum/ad nauseam)

June Baker's letter (pp3/4) prompts me to advise that foreign fonts do exist for Print Magic. MGA have available over 150 additional fonts for PM including "Print Magic FontPak Vol.4" which includes ARABIC, CYRILLIC, EUROPEAN, HEBREW, HIRAGANA, KATAKANA, RUSSIAN, and SANSKRIT. Price is £19.99, and the disk is compatible with Print Magic, Fontrix, as well as Printrix.

As far as Print Shop is concerned, the problem here is that PS doesn't use a complete character set, so there is simply no room to include special foreign characters. Having said that; we do offer a couple of disks which include Cyrillic & Hebrew fonts, although these, of course, are no good to June. (Currently; MGA have ten additional Font Libraries available for PS, each costing just £3.99).

On the MultiScribe front, however; users of this excellent program should be aware of "MultiScribe FontPak 6" which contains the following foreign fonts:- ARABIC, HEBREW, POLISH, CHEKHOV, TOLSTOY, GERMAN, SPANISH, PORTUGUESE, SWEDISH, DANISH, ITALIAN, NORWEGIAN, and FRENCH, for just £19.95. (Eight FontPaks are now available for MultiScribe).

VT-52 TERMINAL EMULATION

Should Malcolm have contacted MGA. (see pp5). he would have been advised that the ideal piece of software would have been "ProTERM" from CheckMate. ProTERM supports both VT-52 as well as VT-100, costs £99.99 (just over £10 more than Gazelle), and requires a IIGS, //c, or enhanced //c. (budget //c enhancement kits are currently available from MGA for just £39.95).

PRINT MAGIC / PRINT SHOP BORDERS

Cameo Entertainments brought up the age-old problem (pp5) of incompatibilities between competing vendors of Apple II graphics software. Print Shop Graphics are indeed compatible with Print Magic, but not vice-versa. PS borders are uniquely formatted and will not work with any other non-Broderbund program. My personal solution to this is to use PS to print a bunch of sheets with the required border, rewind the continuous paper, (make sure to switch off your printer to avoid possible damage), then use PM (without border) to produce your masterpiece.

Incidentally, MGA have 5 additional disks containing extra borders for PS, each priced at just £3.99.

APPLE II PRESTEL/VIEWDATA

Following Stuart Atken's (pp6) letter, it seems relevant to mention a little Apple II history regarding the (strange) V23 1200/75bps standard. In the past there were many options open to the II user wishing to connect to a 1200/75 system. Latterly, however; the only way to do this, (as most available serial cards would not support split baud rates), was to use a combo of Data Highway / Mastercard / Nightingale (or other V23 modem). Since both Data Highway and MasterCard were discontinued, users have been forced to source second-user cards as well as software in order to use 1200/75. When the cards became

almost unobtainable, the only solution was to fund an expensive modem which offered speed-buffering, (such as a Miracle WS-4000).

Now, however; the situation has eased, and the Apple II user may breathe more easily. Pace have made all their Linnet modems eminently suitable with the addition of speed-buffering on all models. This means that you no longer have to find a card that supports split baud rates, and indeed; //c and IIGS users may use the built-in ports.

Although mentioned earlier that Data Highway has been discontinued; it has been resurrected in the form of "Antelope", (available through Apple 2000), and this is the ideal ViewData comms vehicle for IIGS users. The Antelope supports the //c port but not the IIGS port, but IIGS users may use the excellent "Gazelle" software to the same effect.

ANTELOPE	£25.00 (ex APPLE 2000)
GAZELLE	£74.95 (ex MGA SoftCat)
SUPER SERIAL compatible	£59.95 (ex MGA SoftCat)
LINNET V21/V23	£175.00 (ex MGA SoftCat)
LINNET V21/V23/V22	£239.95 (ex MGA SoftCat)

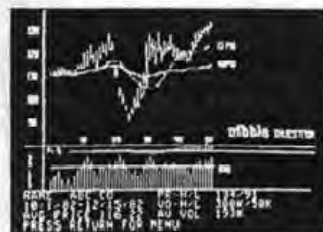
Jon Gurr (Apple II Product Manager, MGA SoftCat)

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LONG	1	22	221.25	11.00	273.00	341	8	43.75	8	18.81	
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COPI			115.25					1037.74	8	19.84	
LONG	1	22	221.25	11.00	273.00	341	8	43.75	8	18.81	
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			5901.24		6773.00			1093.74		18.54	
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Merlin 16+

Dave Ward looks at Glen Bredon's Grand Daddy of the IIgs Assemblers

When I reviewed Merlin 8/16 in Apple 2000 magazine April 1988 pp44 I expected that the program would remain much the same with slight improvements from time to time. Glen Bredon the author of Merlin is a prolific programmer and has almost totally re-written Merlin 16 so that it operates under GSOS and ProDOS 16 version 1.6, and added a great deal extra too.

Merlin has been around a long time and has roots from the original TED II+. TED II+ was written by early Apple Computer Inc. and CALL A.P.P.L.E programmers in Integer BASIC. Glen Bredon based his Merlin on TED II+ but wrote it in machine code; Roger Wagner publishing, then Southwestern Data Systems, marketed the product in November 1981. A little later Merlin appeared under the brand-name Big Mac from the CALL A.P.P.L.E for its members, only.

Merlin-16+ is available to owners of Merlin 8/16 as an upgrade consisting of two 3.5" diskettes and a 64 page supplementary manual. The two diskettes are /MERLIN which contains the program running under ProDOS 16 version 1.6 and the necessary support files. The second diskette /MERLIN.SAMPLES contains source files and other goodies which we'll mention later. To use Merlin-16+ you will need an Apple IIgs with 1 megabyte of extra memory. If you wish to make use of /RAM5 disk you will require a card with greater capacity than the Apple I megabyte card.

When you boot your Merlin 16+ diskette you will be presented with the main menu which would be familiar to even the earliest users of Merlin on a 48K Apple II plus, back in 1981. This apparent familiarity belies a plethora of changes. Let's

take a look at some of these differences between Merlin-16+ and Merlin 16 which I reviewed in Apple 2000 magazine April 1988 pp44.

Merlin-16+ 4.00

Copyright 1989 by Glen Bredon

Wednesday 15-MAR-89 7:42:44 PM

```
C :Catalog
L :Load source
S :Save source
A :Append file
D :Disk command
F :Full screen editor
O :Save object code
U :Utility menu
Q :Quit
```

Source: A\$0040, L\$0000

Prefix: /RAM2/MERLIN

%

The version number is now at 4.xx which indicates Merlin-16+. Merlin 16 had a version 3.xx and is apparently still being marketed as it will run on 128K Apple IIc and Apple IIc computers where the 65C02 chip has been replaced by a 65C802 chip. Roger Wagner Publishing actually supply the 65C802 chip for this very

purpose so that programmers can use these two machines to write Apple IIgs programs. Merlin versions 2.xx were the Merlin Pro and later Merlin 8 for 128K Apple II

computers, incidentally you can still write Apple IIgs programs with versions 2.xx by creating your own special macros. Versions 1.xx were for the Apple II plus and these versions

still run on an Apple IIgs!!

Looking down the menu those familiar with Merlin will notice the new entry U - Utilities. Press U and you will instantly see the menu below:

Merlin Utilities

```
Q-Quit
C-Catalog
X-Copy files
T-Type files
L-Lock files
U-Unlock files
D-Delete files
E-Exhume files
V-Verify files
R-Rename files
TAB-Menu change
S-Sort directory
F-Change file date
/-Create directory
N-Show volume names
B-Toggle bell, now: ON
P-Toggle prompting, now: ON
```

Wednesday 15-Mar-89 7:42:59 PM

Merlin Utilities

```
TAB-Main menu
Q-Quit
M-Move files
D-Dump files
F-Format a disk
E-Erase a volume
K-Compare files
C-Compare directories
L-Locate string
V-Volume copy
```

Wednesday 15-Mar-89 7:43:23 PM

This set of utilities also appears in the latest version of ProSel, which is reviewed elsewhere in this magazine, ProSel-16.

Those familiar with Glen Bredon's ProSel (ProDOS Selector) will notice that the above screens are almost identical to the CAT.DOCTOR utility, except for a number of enhancements, of course. Many users of Merlin have found that the lack of file manipulation utilities is a drawback over some of Merlin's competitors such as Apple Computer Inc. Apple Programmers Workshop (APW) and ORCA/M by The ByteWorks. In a single bound from Merlin 16 to Merlin-16+ one of the best file manipula-

MERLIN-16+ version 4.00

Copyright 1989

by Glen E. Bredon and

Roger Wagner Publishing, Inc.

All rights reserved.

27-FEB-89 12:24:41 AM

tion utilities has been made available to Merlin users. The CAT DOCTOR was described in some detail in my review of ProSel version 3.0 in Apple 2000 magazine June 1988. Since that time, however, many changes have been made and a number of additions, too.

The Commands

Since Merlin version 2.xx there has been a "shell mode" or "command mode" available by pressing D :Disk command from the main menu. This is not a very friendly interface since all you get is a prompt and a cursor waiting for you to enter a command. Earlier versions of Merlin allowed you to type some ProDOS commands here and a few extra ones. The main purposes of this mode appeared to allow users CATALOG disks, change PREFIXes and to install "user programs" such as PRINTFILER etc.

The Full Screen Editor is retained in Merlin 16+ and even though it looks very similar to the Full Screen Editor in Merlin 16 running under ProDOS 8 many enhancements have been added.

1) The screen now scrolls horizontally as you enter text, delete text or move the cursor about; there is now a maximum 255 characters per line.

2) Holding down the Apple key and any keypad number 1-9 moves the screen through the text just like AppleWorks and better still you can configure Merlin 16+ so that the keyboard numbers are swapped with the keypad numbers to make it more like AppleWorks.

3) The Editor stores information in the source file so that when you return to the Editor you return to the last position within the file.

4) Pressing the Apple key + S works in a similar way to AppleWorks except that you are prompted with the filename to allow you to change it if you wish. To accept just press return, though. You can even configure Merlin 16+ to keep a backup as follows: When you press OA-S the old backup is deleted and the last saved file is renamed as a new backup and then the file you wish to save is saved.

5) History is a new feature whereby the last 4000!! (not factorials) key-strokes are recorded so that you can back out of changes easily at any time by pressing OA-U the required number of times. Pressing control-S twice will let you see all the steps recorded in the history (undo) buffer. The first control-S gives the little table below:-

Free: 64860	Used: 611
History: 14 steps.	Clip: 16

The next control-S gives the whole history in a scrollable box.

6) The command box is still available by pressing OA-O and will now accept many more commands including all the 'shell mode' commands as discussed earlier. For instance you can CATALOG the current directory pointed to by the current PREFIX. Pressing return to end a command returns control to the Editor but pressing Enter key on the keypad leave control with the command box ready for another command.

Merlin 16+ has four 64K byte buffers which are as follows :-

Buffer	Command	Action
A>Editor		
B>Put file	SWAP	Swaps A with B
C>Use file	SWAPU	Swaps A with C
D>Clipboard	SWAPC	Swaps A with D

This is a really useful Command Box feature and will let you Swap in the Use file, for instance, and edit it. Then go to the main menu to save the new Use file; return to the editor Swap back to the main program and assemble.

7) Older versions of Merlin required separate utilities for Sourceror and Macgen. Merlin 16+ on the other hand has these as part of the program and they can be invoked from the Command Box. For instance to disassemble a file from disk you just enter DIS "filename" in the Control Box. Macgen is just as simple.

How fast does it Assemble?

All versions of MERLIN are very fast at linking and assembling and I have constructed a little table to show this:-

Merlin version	Processor speed	length of source	time to assemble
MERLIN-16+	Fast	873 lines	1.8 = 29,100 lines/sec
MERLIN 16	Fast	873 lines	4.2 = 12,471 lines/sec
MERLIN 8	Fast	873 lines	5.6 = 9,353 lines/sec
MERLIN 8	Slow	873 lines	13.0 = 4,029 lines/sec

Merlin_16+ allows one to use much larger source files than the one above with only 873 lines. With larger source files the speed ratio between Merlin 16 and Merlin-16+ will approach a factor of 3.00; the above is just 2.33. Most source code files will assemble at rates between 24,000 and 35,000 lines per minute. The manual boasts that up to 40,000 lines per minute is possible but it is unlikely that you'll achieve that often; source consisting of only code without comments can, at best, reach 41,000 lines per minute and source consisting of just comments will almost always exceed 150,000 lines per minute. Therefore, source files with a lot of comments will appear to assemble at faster line rates!!

The Extra Utilities

On the two diskettes there are a vast array of utilities and support pro-

grams many of which have been contributed by other programmers. For instance Dave Klimas one of the authors of HyperStudio has re-written the Apple IIgs tool box macros which automatically place the correct data on the stack. These are called Super Macros and only take one line shortening listings and making them usually more readable.

Source files are also available such as SKELETON.S which can be used as a springboard for your Apple IIgs desktop programs. Many other source files are available for both 6502 and 65816 routines.

Nifty List by David Lyons is given as a free with Merlin 16+ the shareware fee being pre-paid by Roger Wagner Publishing. Nifty List is a very useful CDA for programmers to examine memory and disassemble code etc.

Another CDA, Internals, by Ken Kasmarek is given free. Internals as one might expect gives valuable information pathnames, segment tables, tools, CDA/NDAs and memory.

Conclusion

Merlin 16+ has been written with the user in mind; the text screen is used to give improved speed. Everything associated with the program has been designed to make the preparation, assembly and linking of machine code programs as quick and pleasant as possible. During use of the package I did not succeed in finding any real bugs. Merlin, in my opinion, simple to use, very fast and ideal for beginners to experts.

Dave Ward



info

Product : Merlin 16+
 Publisher : Glen Bredon
 Available from :
 MGA Softcat
 Pear Tree
 Appledore
 Kent TN26 2AR
 (0233) 83571
 Price : £99.99 inc VAT

Value : ★★★★★
 Performance : ★★★★★
 Documentation : ★★★★★

Applied Apple Spreadsheets

(2) Incorporating blocks of data into your Spreadsheet application

Paul McMullin continues his series

Last month we covered the techniques of getting data into your electronic spreadsheet. You will often find that successive batches of data need to be subjected to organization and data extraction in order to produce useful reports. Spreadsheet programs which allow classification of data by one or more fields or columns may be useful for this. You can classify and extract data even if your spreadsheet program does not have this facility. We are now going to look at some ways of doing this by using the inherent power of the electronic spreadsheet. Within certain limits (which vary among the techniques shown) you should be able to adapt these tricks to deal with much larger problems.

I.) Nested If functions

In Figure 1 we have a block of data representing the yield of 3 different varieties of potato, each of which were planted in three different plots. In each group of 3 plots all three varieties are planted but the order is random. Our objective is to produce the table on the right which separates the data by treatment and calculates the mean for each treatment.

The representative formulae in Fig 1b show how the data were transferred in this case. Nested @IF functions were used to check the number of the variety in column B for each plot in the group successively until a match is found, in which case the yield is returned. Note that the only thing that changes in the formulae from one column to the next is the treatment number. When we scan down a column on the other hand the treatment number remains the same but the cell references vary according to the group of plots.

Admittedly this technique is pretty primitive, and it does have definite limitations:

1. To develop a table for another number of treatments/group it is necessary to modify drastically the formulae.

2. There is an effective limit of around 6 to 10 treatments (depending on the spreadsheet program used) because of the number of nested IF functions which can be fit in a cell.

II.) Transfer Table with counter and circular references

This title sounds rather formidable, though the implementation and modification of this method often turns out to be simpler than for the previous one. We will use the same example as for the previous method, and the table of results to be produced is also the same (Fig 2).

First of all a short digression! Circular references occur when a cell contains a formula which refers to itself. As you may imagine this can result in some fairly complicated results with successive re-calculation of a template. In fact one spreadsheet manual recommends that circular references not be used in formulae. Well, don't quote me on this but, I have only been able to find one problem of using a circular reference in a carefully designed formula and template; you will get an @ERROR message if the circular reference is active when the template is first loaded from disk. My phrasing of the problem may give a hint to one solution. We can

"hide" all such circular references behind an @IF function so that they only become active when a certain cell has a certain value. Of course we must make sure that that cell does not have that value when the template is saved to disk. Such a cell can become a "switch" to turn off and on parts of the work-sheet. It is usually convenient to give the switch cell a graphic format (*) and make 0=OFF and >0 = ON.

The circular reference + switch technique is used to implement (among other things) a counter in the upper left corner of the template shown in figure 2. The formulae are shown in figure 2a. Note that a transfer table has been set up in column F. The value for yield is transferred to it if the identification of the variety (col C) matches the value in the counter. Re-calculating the spreadsheet three times will successively transfer the yields of treatments 1, 2, and 3 into the cells 6 (group 1), 9 (group 2) and 12 (group 3) in the G column. These values are then pulled down into the column of the table according to the number of the counter. Fig.2 shows the spreadsheet at the end of three recalculations. Self references are used to maintain the values already transferred during subsequent calculations. To reset the spreadsheet you should enter a 0 at cell A1 and recalculate. The order of recalculation for the model as shown must be horizontal to avoid forward references. Column F is easily replicated down (replicate R N R), as are the formulae in column G. Representative formulae from the table, shown in Fig 2b, bring some of the same difficulties of replication as those in the previous method, however the formulae are

Fig.1.3 Appearance of first solution to potato yield problem.

<A>		<C>	<D>	<E>	<F>	<G>	<H>
<1>Potato	Experiment	Kg/Hectare		Summary of Results			
<2>Block	Variety	Yield					
<3> 1	3	21250					
<4> 1	1	20250	Group.	1.	2.	3.	Mean
<5> 1	2	19000	1	20250	19000	21250	20170
<6> 2	2	20250	2	21000	20250	22000	21080
<7> 2	1	21000	3	19750	18500	20500	19580
<8> 2	3	22000	Mean	20330	19250	21250	
<9> 3	3	20500					
<10> 3	2	18500					
<11> 3	1	19750					

FIG 1b.3

Representative formulae used to extract table in Fig.1

(Horizontal series)

>E5:@IF (B3=1,C3,@IF (B4=1,C4,@IF (B5=1,C5,0)))
 >F5:@IF (B3=2,C3,@IF (B4=2,C4,@IF (B5=2,C5,0)))
 >G5:@IF (B3=3,C3,@IF (B4=3,C4,@IF (B5=3,C5,0)))

(Vertical series)

>E5:@IF (B3=1,C3,@IF (B4=1,C4,@IF (B5=1,C5,0)))
 >E6:@IF (B6=1,C6,@IF (B7=1,C7,@IF (B8=1,C8,0)))
 >E7:@IF (B9=1,C9,@IF (B10=1,C10,@IF (B11=1,C11,0)))

much shorter.

Advantages and disadvantages :
The major advantage of this technique over the previous is that it is practically unlimited in the number of classifications it can separate, and that it is easier to adapt to different sizes of groupings. Its major disadvantage is that it requires at least one recalculation cycle for each item to be separated. Large and complicated templates can take some time to get done.

III.) Keystroke Memory / Macro Commands

A number of the more recently launched spreadsheet programs (Advanced Visicalc, Supercalc 3a, Appleworks+Macroworks) allow the user to define multi-keystroke macro commands. Advanced Visicalc,

which was used to develop this example, calls this "Keystroke Memory". By way of a change let's take a new type of problem for this example as shown in Fig.3. The table of data shows the rainfall measured on the potato plots on certain days during the experiment. We want the table of results to show the rainfall by day and treatment. Here we already have the items in each group sorted but the groups do not compose a regular numeric series (days 1,5,7).

The formulae in the results table itself are very similar to those in the previous example. They include a circular reference for the same reason as previously, therefore a switch is necessary (at A2) to prevent the loading @ERROR. The counter and transfer table have been replaced by a macro sequence and a transfer area.

The code for the macro sequence (defined on key A) is shown both on the template (Fig 3) and in the table of formulae (Fig 3a). The template must be "switched on" (enter 1 at A2), and be divided into two windows for this technique to work. The cursor should be on the DAY entry for the first item. The break-down for the code of the macro command is as follows :

1. Switch Windows (:)
2. Goto cell B15, the top of the transfer area. (>B15^R)
3. Switch windows (:)
4. Replicate Day No. to cell B15 in other widow (/R^R;^R)
5. Move 2 columns right. (^>^>)
6. Replicate 3 rainfall values to transfer area (/R^D^D^R;^D^R)
7. Move cursor 3 rows down and 2 columns left (^<^<^D^D^D)
8. Force recalculation (!)

The macro is made up of fairly easily understood commands with the exception of special codes for RETURN (^R) and cursor moves (right = ^>, left = ^<, up = ^U and down = ^D). Obviously the content of the macro would be different if we were to use Appleworks+Macroworks or VIP Professional, however, the principle would be the same.

Advantages and disadvantages :

This shares the disadvantage of the previous example of needing repeated recalculations in order to construct the table of results. This time it will be one cycle for each group rather than for each treatment. On the other hand it does provide a basis which is much more readily modifiable to accommodate different sized groupings. Instead of having to modify a large number of formulae you need only modify the cursor movement parts of the keystroke memory sequence. See Figure 3.

It might be argued that much of what we have been doing here should not really be done on a spreadsheet at all but in a data-base. By doing the job in a spreadsheet however we have access to much more sophisticated calculations than would be possible in most data-base programs. By using the techniques shown here it is possible to set up spreadsheet templates which take large masses of data and generate appropriate reports. Even if the underlying template is complicated its operation can be simple.

STOP PRESS!!!

Some serious limitations of the Appleworks spreadsheet were described in the previous

Fig.2.3 Final appearance of template when using second solution to potato experiment problem.

<A>		<C>	<D>	<E>	<F>	<G>
<01>Switch V Potato Experiment Kg/Hectare						
<02> *						
<03>Counter V	Group	Variety	Yield		Transfer	Block Sum
<04> 3	1	3	21250		21250	
<04>	1	1	20250		0	
<05>	1	2	19000		0	21250
<06>	2	2	20250		0	
<07>	2	1	21000		0	
<08>	2	3	22000		22000	22000
<09>	3	3	20500		20500	
<10>	3	2	18500		0	
<11>	3	1	19750		0	20500
<12>						
<13>	Summary of Results					
<14>						
<15>						
<16>	Block.	Treatment				Mean
<17>	1	20250	19000	21250		20170
<18>	2	21000	20250	22000		21080
<19>	3	19750	18500	20500		19580
<20>	Mean	20330	19250	21250		

Fig 2b.3

Representative formulae used to extract table in Fig.2

```
(Switch + Counter)
>A1:"Switch V"
>A2:/F*1
>A3:"Counter V"
>A4:@IF (A2>0,A4+1,0)

(Transfer Table)
>F4:@IF (C4=A4,D4,0)
>F5:@IF (C5=A4,D5,0)
>F11:@IF (C11=A4,D11,0)
>F12:@IF (C12=A4,D12,0)
>G6:@SUM (F4...F6)
>G9:@SUM (F7...F9)
>G12:@SUM (F10...F12)

(Final Table)
(horizontal Series)
>D18:@IF (A2=0,0,@IF (A4=1,G6,D18))
>E18:@IF (A2=0,0,@IF (A4=2,G6,E18))
>F18:@IF (A2=0,0,@IF (A4=3,G6,F18))
(vertical Series)
>D18:@IF (A2=0,0,@IF (A4=1,G6,D18))
>D19:@IF (A2=0,0,@IF (A4=1,G9,D19))
>D20:@IF (A2=0,0,@IF (A4=1,G12,D20))
```


article (June 1989). Rather complicated tricks were shown for getting around a major one, the difficulty of transferring blocks of data into spreadsheet templates in a manner in which they can be accessed. Claris announced version 3.0. of Appleworks at the end of June. This is a major upgrade. Not alone does it solve this problem, but a multitude of others as well. A built-in spelling checker has been added, and it is now much easier to select and load ASCII and DIF files from disk. If you use Appleworks for serious number-crunching you should be on the look-out for this program.

Paul McMullin



Fig 3.3 Appearance of rainfall example template after 3 re-calculations.

	<A>		<C>	<D>	<E>	<F>	<G>
<01>	Switch V Mm. rainfall during potato expt.						
<02>	* by day and variety						
<03>	Day	Variety	mm.precip.				
<04>	1	1	5				
<05>	1	2	12				
<06>	1	3	7				
<07>	5	1	6				
<08>	5	2	3				
<09>	5	3	8				
<10>	7	1	7				
<11>	7	2	13				
<12>	7	3	12				
<13>							
<14>	Transfer		Summary of Results				
<15>	day ->	7					
<16>	rainfall>	7					
<17>	13	Day	1.	2.	3.	Mean	
<18>	12	1	5	12	7	8	
<19>		5	6	3	8	6	
<20>		7	7	13	12	11	
<21>		Mean	6	9	9		

Fig 3a Representative formulae for rainfall template.

(Keystroke memory sequence)

/K^A;>b15^R;/r^R;^R^>^>/r^D^D^R;^D^R^<^<^D^D^D!

(Horizontal series)

>D18:@IF(A2=0,0,@IF(B15=C18,B16,D18))

>E18:@IF(A2=0,0,@IF(B15=C18,B17,E18))

>F18:@IF(A2=0,0,@IF(B15=C18,B18,F18))

(Vertical series)

>D18:@IF(A2=0,0,@IF(B15=C18,B16,D18))

>D19:@IF(A2=0,0,@IF(B15=C19,B16,D19))

>D20:@IF(A2=0,0,@IF(B15=C20,B16,D20))

Next time around
We will look at some techniques for performing calculations on dates even if your spreadsheet program does not have built-in functions for this purpose. We will also take a general look at the characteristics of spreadsheet programs which have been used on Apple II computers.

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Clarity

Open-Apple is Tom Weishaar's monthly newsletter for knowledgeable Apple II users. It's thin but packed tight with Apple II lore, humor, letters, tips, advice, and solutions to your problems. Compared to other Apple II publications, Open-Apple has the highest new-idea-per-issue ratio, the clearest writing, the funniest cartoons, the longest index, the best warranty (all your money back if you're not satisfied), and it takes up the least shelf space.



Il cue #49

All of the new Beagle Bros Timeout series of AppleWorks enhancements are good. UltraMacros is incredible. But Quickspell is a work of true genius. What makes it so good is its user interface. After checking three dictionaries, it gives you a list of all words it couldn't find. You can select which words to ignore, which to fix, which to add to your custom dictionary, and which to look at in context. For more, see the February 1988 Open-Apple page 4.3.

From our fan mail:

"Lee Raesly directed questions and added his input to a panel of four Apple II stalwarts....A brief recounting of their answers may be of interest to many of you:

Q. What magazines are available?
A. WAP Journal, Ar. AppleWorks Journal, Byte, Call Apple, inCider, Open-Apple, Nibble. (After WAP Journal Open-Apple was the unanimous favorite.)"

Washington Apple Pi Journal
Washington D.C., January, 1988, page 10

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Cirtech Diamond Hard Disk Drive

Dave Ward looks at the Apple II version of the drive



Anyone reading the last few issues of Apple 2000 magazine will hardly have failed to notice the high profile (not Apple drive!) given to hard disk drives in Ewen Wannop's excellent articles on how to make your own from components. Many users don't, of course, want to go to all that trouble and prefer to purchase an 'off-the-shelf' unit.

Cirtech, who for many years have produced memory expansion cards for all Apple II computers with slots, have added a range of SCSI hard disk drives for both Apple II and Macintosh computers. Two sizes, nominally, 32 megabytes and 48 megabytes are available at present and for the purposes of this review we will test the 32 megabyte Diamond Hard Disk Drive with a Cirtech SCSI interface card in an Apple IIgs and enhanced Apple IIe computers.

The Cirtech Diamond Hard Disk Drive comes complete and ready to install including all plugs and is already formatted for the computer you specify when ordering! You get the hard disk, of course, SCSI cable, a mains lead with plug attached! and the disk comes with a terminator attached. This latter point is important because a SCSI device last in the chain must have a terminator which for many other hard disks adds another £30.00 onto the bill as a hidden extra. A thin manual following the usual Cirtech design is also included, to describe installation and hints on trouble-shooting should you require them.

The Diamond Hard Disk is in a platinum coloured metal box, 246mm by 240mm by 55mm, which blends in well with the Apple IIgs and its peripherals. The manual describes how to install

The Diamond Hard Disk and it took me less than 5 minutes to complete the installation. I placed a Cirtech SCSI card in slot 7 but could equally have used an Apple SCSI card, but we'll discuss that later. When you attach SCSI devices to your computer they must have unique SCSI device numbers ranging from 0-7. In this case the SCSI card was set to 7 and The Diamond Hard Disk was set to zero. The Diamond Hard Disk has a neat 3 position switch at the back from which you can choose 0, 1 or 2 SCSI device numbers. This may be a little inflexible but is worth it. Choosing SCSI devices on other devices is usually much more tricky.

The Diamond Hard Disk takes about 20 seconds to warm up after it is switched on and will then boot-up as it is already formatted under ProDOS 8. A copy of the Cirtech SCSI support software is supplied for convenience, since most users will have the Cirtech SCSI interface card, which I reviewed in April 1989. I erased these files and setup GSOS and ProSel-16 on the disk for use on my Apple IIgs. The speed of The Diamond Hard Disk is a fast drive with an average track seek time of 28ms and is clearly much faster than 3.5" diskettes. In general The Diamond Hard Disk is at least 2.5 times faster than a 3.5" diskette for pure disk access in all the tests that I have carried out. After a lot of use, particularly with programs like AppleWorks, many files on the disk can become fragmented but this does not appear to have much effect upon the speed of the disk. The Diamond Hard Disk being reviewed here had a capacity of 31.47 megabytes and has performed extremely well over the 4 weeks I've

been testing it.

Like any ProDOS formatted disk you can only have 51 files in the root directory and so you'll need subdirectories on such a large drive. It is good practice to keep the number of files in a subdirectory to a manageable number, preferably not greater than 150 even though you can have more than 16000. You can use a Cirtech Diamond Hard Disk with an Apple SCSI card but you will need to re-format it because it uses some extra blocks on the disk.

Hard disk drives are relatively new to the large majority of Apple II users and so Cirtech's all-in package, with the Cirtech SCSI card included, is logical. Most purchasers will appreciate the complete package which saves them time and hassle. For Apple IIgs users the need for a hard disk is fast becoming a necessity just like it has been for our Macintosh friends for some time.

In the few weeks that I have been using The Diamond Hard Disk I have found it to be a fast, efficient hard disk drive that is very good value for money. No doubt, in the future, higher capacity units will become available. Cirtech are already working on hard disk cards with 20 and 40 megabytes that will simply plug in a slot in any Apple II computer with slots.

Dave Ward

info

Product: Diamond HD

Manufacturer: Cirtech

Available from:

Cirtech (UK) Ltd

Currie Rd Industrial Estate

Galashiels

Selkirkshire TD1 2BP

(0896) 57790

Price: 32mb £598.00 inc VAT

48mb £678.50 inc VAT

Value: ★★★★★

Performance: ★★★★★

Documentation: ★★★

MGA HOTLINE
0233 83294

MacroMate

Dr Peter Stark reviews this powerful Keyboard Macro facility for the IIGS

Introduction

As you probably know already, a 'macro' is a feature such that pressing two or more specific keys simultaneously has the same effect as several or many individual keystrokes applied one after the other. For example, if the Open Apple key and another key are pressed at the same time, a predetermined string of text or a series of keyboard commands can be sent to the current program. Several excellent programs for defining and applying macros are already on the market, notably TimeOut UltraMacros, AutoWorks, and Diversi-Key (the first two of these being specifically for use with AppleWorks).

Recently, Roger Wagner Publishing Inc. have brought out MacroMate (TM), which is another well designed and useful macro program. MacroMate is for use on the Apple IIGS, and is automatically installed (loaded and activated) as a Classic Desk Accessory (CDA) when a ProDOS 16 startup disk equipped with MacroMate is booted. If the separate program, PSCDA, is applied, MacroMate can also be put onto ProDOS 8 disks - a valuable option. MacroMate is described by its producers as a 'universal keyboard macro program'. This means that once it is loaded and active on a IIGS, MacroMate operates in the background of ProDOS 16, ProDOS 8, DOS 3.3, or Pascal programs and can be brought into action by certain keypresses (such as 'Open Apple-key' or 'Option-key' combinations) which the user can define as needed.

What you get

MacroMate is supplied on an un-protected 3.5" disk, together with a 100 page spiral bound manual. The manual is written very clearly, gives many helpful details, and does not assume that the prospective user of MacroMate is an expert. As a result, I had little difficulty in following its descriptions and instructions. There are summary paragraphs (in italics) at intervals throughout the manual, and these too are useful when learning to get to grips with MacroMate. A couple of Quick Reference cards are given at the end of the manual.

Defining and using macros

MacroMate gives you two alternative ways of defining macros: the Record Mode and the Edit Mode. The Record Mode enables you to define macros as you go along, rather than having to define them in advance. This is a simple process, except that you have to be careful not to type too quickly since MacroMate may not be able to keep up with you.

The second way is to use the MacroMate Editor. Although at first sight this looked a little more complicated, in practice I have found the MacroMate Editor easy and convenient to use. Like other CDA's, the MacroMate Editor is accessed via pressing Control-Open Apple-Escape. On selecting MacroMate from the display, two windows (Select Macro, and Edit Macro) appear. The Select Macro window is used for choosing which macros to define or edit. MacroMate allows you to define up to 384 different macros per macro definition file. In the Select Macro window, the available characters are shown grouped into 6 boxes, corresponding to keys which can be applied together with given combinations of the Control, Open Apple, and Option (Closed Apple) keys. It is very easy to switch between the Select Macro and Edit Macro windows, and to move to various parts of either window. As the name suggests, the Edit Macro window is where you actually enter and edit the macros that you want. A down-arrow beneath a character in the Select Macro window shows that a macro has already been defined for that character (plus the appropriate Control, Open Apple, and/or Option keys). On the other hand, a down-arrow below a character in the Edit Macro window is a sign of a 'nested' macro, i.e. where another macro has been included in the definition of the current macro. MacroMate has a Clipboard, which can be used for copying and pasting selected text between one macro definition and another, and even between different macro definition files. Explanatory comments can be added to macros, if wished.

Once you have finished using the MacroMate Editor to define whatever

macros you want, you can save them to disk. Likewise, you can load macro definition files from disk, choosing these to suit the particular program that you are about to use. You can have a range of macro definition files on disk, each for use with a different program, if you wish. In this respect, my only complaint is that MacroMate does not provide a list of the macro files that are already on disk: this is a little inconvenient. However, it is not difficult to write a macro which will do this for you. The MacroMate System Disk comes with four ready-made macro files. One of these is set up for use with Applesoft BASIC, and another for AppleWorks. Of course, you can modify these as much as you want, and can create entirely new ones for other purposes. Whichever file is called 'Macros' is the one which is loaded in from disk during the startup. As implied above, you can then load in a different file to replace the original one if you want to.

Other very useful features which you may want to use sometimes include the Auto-Activation and Auto-Macro functions. With Auto-Activation, you can decide whether or not to have MacroMate active during and after startup. The Auto-Macro function lets you automate the startup process for your Apple IIGS almost completely. For instance: not only can a particular program be made to run, but in addition predetermined commands etc. can be executed by the IIGS operating alone but acting much as if you were actually typing them in yourself. If necessary, by going via the Select Macro window you can tell MacroMate to ignore either the Open Apple key or the Option key when one of these is pressed. This would for example be sensible in the case of a macro definition file intended for application to AppleWorks, since AppleWorks itself uses many Open Apple-key commands.

Other points

The manual gives detailed and clear descriptions about how to install MacroMate on disks of various kinds. MacroMate takes up about 25 K on a disk, and a typical length for a macro file would be 10 K. Instructions are also included for creation of ProDOS 16 disks having the DeskTop program as a startup facility (for program selection and for other purposes). In several respects, the DeskTop is more convenient than the Finder (though less colourful), and it has the further merit that it can be switched if you are currently using the program SoftSwitch. MacroMate itself can be used together with SoftSwitch, as explained in the manual. You do need to be aware, however, that the 'Startup' function on the DeskTop may not work properly with 5.25" floppy disks or with certain other programs. This is a problem related to the IIGS feature called 'Interrupts'. In

such cases, you will usually just need to turn MacroMate off temporarily, and then to turn it on again once the program is running.

Overall impressions

I found it easy to learn how to use MacroMate, and it was not long before I felt completely at ease with this program. The manual was a good help in this respect. MacroMate has few quirks, but a notable one is that it is sometimes necessary to include 'delay characters' in macro definitions. This need is related to the fact that certain programs delete buffered keystrokes. Although this does take a little time to get used to, with MacroMate it is so easy to modify macro definitions that little inconvenience is caused. One soon develops a feel for the extent to which delay characters are likely to be needed. A helpful feature of MacroMate is that when the proper keypresses have been used to start certain operations, the border of the screen changes to a characteristic colour. For example, a dark red screen border signals that MacroMate is now in its recording mode. The border turns back to its normal colour when you finish the macro definition.

To summarize, then: MacroMate is a fine program for defining and using macros, and is both powerful and versatile. The same adjectives apply also to UltraMacros, AutoWorks, and Diversi-Key, but the first two of these are limited to use with AppleWorks. In view of its ease of use and its capabilities, MacroMate is well worth consideration if you have an Apple IIGS, particularly if you are interested in using macros with other programs besides AppleWorks.

Peter Stark



Footnote: This review first appeared in a recent issue of The Gateway Gazette (published by the Gateway Computer Club, Mildenhall, Suffolk).

info

Product : MacroMate
Publisher : Roger Wagner
Available from :
MGA Softcat
Pear Tree
Appledore
Kent TN26 2AR
(0233) 83571
Price : £39.95 inc VAT

Value : ★★★★★
Performance : ★★★★★
Documentation : ★★★★★

How to replace a IIGS battery for less than \$10.00!

Well folks my //gs started to mess up about two weeks ago and I went nuts trying to figure out what was the cause. The control panel cleared to the defaults and the clock time was all off, Appleworks would not load and so on.

After I figured it must be the battery as it has a life of about 2+ years and as my //gs is going on 3 years old it was about time.

I called my friend at the local Computerland and had him order a battery. Part number he used was APPL-7420007 (not sure if this is Apple's # or Computerland's). Cost to me was \$8.40 plus tax (\$8.92 in my hand!). Now off to the house to get out my trusty soldering iron and a couple of brews. (My computerland offered to do the swap out for \$15.00-\$20.00 in labor). I disconnected the power and all the cables. Took out all the cards and the power supply (it only has two quick disconnect plugs so is easy to remove).

Now the next question was how to get at the battery. There are two ways to do this and I prefer to remove the motherboard versus soldering with the mother board in the casing. In the front of the computer there is a "foot" and this covering must be removed. If you turn over the computer you will see 3 hook like snaps. Just use a screwdriver and gently force one of the side ones backwards and so on with the other two. This will free up the "foot". You will also see about 8 snaps holding the mother board in place. Gently move them backwards while lifting up on the motherboard from the front. This ought to free up the motherboard.

Next step is to get a pair of side cutters out and cut the legs off the battery mounted to the motherboard, leaving the stubs or legs still soldered to the mother board. Be sure to note which end is (+) or (-). I then trimmed up the stubs sticking out of the motherboard to be about 1/4" long. Be sure to not trim them off too short. I then trimmed and bent the legs on the battery to mate with these stubs. I guess you could desolder them from the motherboard but this way is faster and a bit neater. Now all you do is solder the legs from this new battery to the legs from the old battery. Be sure to use a bit of flux and resin core solder. (NO ACID CORE)

(WATCH the POLARITY (+) and (-) to be sure the new battery is installed in the correct direction)

Reverse the disassembly procedure and you are done. If the battery goes out again just desolder this "new" battery from the old legs and install a

new one. This whole process took me about 15 min and saved at least \$20.00. Total cost was \$8.92 and a bit of solder and a couple of brews.

Reboot the system, reset your control panel and all should be ok for another 2+ years.

Remember you don't have to swap out the motherboard, pay an outrageous price for the new battery or buy a new computer. If I can do it anybody that can use a simple soldering iron/gun can do it in a few minutes without actually having to solder directly on the motherboard. (You are soldering to "legs" sticking out of the motherboard)

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Thanks.... Apple][forever!!



PS The required 3.6 volt lithium battery is available from many photographic shops as a replacement battery for some cameras. This battery does not have connecting lugs, but you can connect to the existing wires on the IIGS using a metal loaded epoxy resin glue. Ed.

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ProSel-16

Dave Ward takes on board the full 16 bit version of Glen Bredon's famous PROgram SElector

Back in June 1988 I reviewed ProSel a ProDOS program selector by Glen Bredon. Since that time the ProSel package has gone through 9 updates and the latest version stands at 3.9. In late February 1989 I learned that an Apple IIgs version of ProSel, ProSel-16, was to be launched and duly sent off for an update copy.

ProSel-16 is only available direct from Glen Bredon, who supplies the software on a 3.5" diskette only. On the diskette you get:

- 1) ProSel-16
- 2) ProSel-8 (the latest version of ProSel for 8 bit Apple // computers)
- 3) Documentation for ProSel-16 and ProSel-8
- 4) A couple of games.

Since there are now two ProSel systems we will refer to them as ProSel-16 for the 16 bit Apple // computers and ProSel-8 for the 8 bit classic Apple // computers.

To run ProSel-16 you must have an Apple IIgs with at least 512K extra memory. ProSel-16 works perfectly under ProDOS-16 version 1.6 (system disk 3.2) and also GSOS (system disk 4.0). ProSel-16 works best on large disk drives; the bigger the better. Before you can install ProSel-16 you must have installed ProDOS-16 or GSOS on the disk unlike ProSel-8 which installs the operating system, ProDOS, too. ProSel itself is the START program in the SYSTEM folder (sub-directory).

The first thing to do is to write-protect your master diskette and then make a copy using a standard Volume copier such as the one in the ProSel-16 utilities. You should then carefully store away the master diskette because you'll require it if you wish to get an update of the system, as we shall see later.

Booting the ProSel-16 diskette produces the ProSel application screen shown in Figure 1.

Booting the diskette takes a quite a bit longer than the ProSel-8 versions because it boots up through ProDOS-16 or GSOS. This screen is 80 column text, as you are probably aware, and is user modifiable which we will discuss later. Using the 80 column Apple

// text screen makes ProSel operations very much faster than the alternative super high resolution screens that other program selectors such as the FINDER. You will notice that one of the application entries is highlighted and pressing RETURN or clicking the mouse button will execute the application. You can move from one application to another by using the mouse or the cursor keys or alternatively by pressing the first alphabetical character of the application name. When the diskette boots up through GSOS or ProDOS-16 it assigns device numbers to all the disk drives it finds; device number 1 is always the boot disk, for instance. GSOS also allows up to 32 PREFIXes and ProSel-16 assigns up to 8 (0-7) when it boots; these are user specifiable and can be changed from ProSel-16 or applications programs. Pressing the keyboard keys (1-9) shows a similar screen to the applications screen with all the executable files and folders, from the device corresponding to the number you pressed. Similarly pressing the keypad keys (0-7) uses the PREFIX number to display a similar screen. You can move about these screens in the same way as in the applications screens.

Pressing ESCAPE produces the ProSel main menu which is shown in Figure 2.

You can also get to this menu by

Figure 2

ProSel-16 5.

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Tuesday 21-Mar-89 9:04:23 PM

```
H - Help
Q - Quit
E - Editor
U - Utilities
F - File Finder
P - Show prefixes
W - Warm shutdown
C - Cold shutdown
S - Shell command
R - Refresh screen
B - Backup/Restore
X - Exchange screens
I - Information desk
ESC - Return to screen
M - Modify parameters
```

pressing the open-apple key simultaneously with the character shown in the main menu. The chosen option will be highlighted and executed by pressing RETURN.

Those of you who have used ProSel-8 will notice a huge difference. In ProSel-8 the main menu was simply a very basic application screen editor for those who couldn't afford the space to keep the 'real editor' available. This basic editor has gone from the ProSel-16 main menu and has been replaced by all the above utilities. Let's look at a few of them :-

ESC - Returns to the application screen.

Q - Quit

W - Warm shutdown

C - Cold shutdown

M - Modify parameters. ProSel-16 keeps track of a number of parameters that can be changed with this feature. For instance you can specify slot, setup strings etc. for printers using facilities such as The Information Desk etc. You can also assign three character names to the 8 user filetypes (\$F1-\$F8). The eight PRE-

Figure 1

```
---ProSel-16 stuff---  ---Miscellaneous---  ---Environmental---
Utilities              Applesoft BASIC      HeIIIIIIIIp me please!
File finder            Volume copy - GS      Show devices & prefixes
Information Desk       Screens Demonstration  ProSel-8
Shell mode
ProSel-16 editor
Commands  C           Utilities  C           Quit
                   Prefix fl  C           Shutdown system

*** Press G <RTN> for Greetings & Installation & Doc. printing ***
```

```
d /PROSEL - Application listing d
ProSel-16  ESC for main menu  Sunday  7-May-89  8:01:41 PM
```


FIXes can be set and you can specify the disk devices where your backups are to be sent to and restored from.

S - Shell command. This is also called the Command line and is new to ProSel. Glen Bredon says that it is necessary in case the ProSel applications screen cannot be loaded due to corruption, for instance. Like all Shells this is basically a blank screen with a cursor waiting for you to type in something (a command). To provide a little more friendliness you can type HELP or ? when a list of all the available HELP files will be shown. Choosing one of these topics gives more detailed information on that particular topic. The number of HELP topics depends upon how much disk space you have available. You may even create your own.

The Shell Command Line also has many intrinsic commands such as CAT which allows one to show the files in the directory pointed to by the current PREFIX. PRINTER switches on the printer and CONSOLE switches it off. You can even COPY files.

External Shell commands on disk are available and can also be written. Of the ten provided you can type text files and change filetypes etc.

Quite a powerful feature of this Shell Command Line is the ability to RECORD a sequence of commands and store these in a file which can later be EXECed.

All in all the Shell Command Line may be rather unfriendly but it is very powerful.

R - Refresh screen. Simply re-reads the ProSel-16 application screen from disk.

B - Backup/Restore. This set of utilities has been completely re-written for ProSel-16. It is a little slower than the backup/restore in ProSel-8 but is much more flexible. The nice feature of the system is the ability to backup a directory within a disk rather than have to backup the whole

disk. You can also backup only those files that have changed since the last backup.

X - Exchange screens. This is a facility for swapping application screens produced with the ProSel-16 Editor. Up to 9 are listed which you can choose by number or cursor. You can also use the Editor or produce an entry on an application screen to run one of these alternative screens and bypass the exchange screens facility.

I - Information desk. This is very similar to the ProSel-8 version with little outward changes. This facility is used to produce catalogues of disk devices, or sub directories, to screen, printer and disk file in 5 different ways :-

- 1- Catalog
- 2- Block usage by files
- 3- File usage by blocks
- 4- Bit map
- 5- Directory tree

Type of information:

H - Help. This invokes a list of available help files which can be shown on the screen if desired.

E - Editor. This is the main ProSel Editor and is extremely similar to the older ProSel-8 Editor. This is the utility that allows one to produce those application screens. There is an automatic mode which makes setting up of application screens a breeze; all you need to do is choose the SYSTEM or SYS16 file from a list and press RETURN. The only editing required is to change the name to the one you prefer. Even Applesoft programs can be setup automatically! Options within the specification are available to make ProSel purge memory before running the application etc.

You may create entries on an application screen that specify a directory and you will then get a screen similar to that obtained by using the number keys.

Entries can be created that go straight to another ProSel-16 screen.

You may also, just like in ProSel-8, create pure text, inverse text and mouse characters on the screen and even prevent them from being highlighted.

F - File Finder. This does just what it says.

P - Show prefixes. Figure 3 shows what a typical screen looks like. First the 8 PREFIXes (0-7) which you can, of course, change permanently using the Modify Parameters feature or temporarily from the Shell command line.

The devices list shows how they were assigned during the boot-up of ProSel. The boot disk is always assigned device 1 and unless you make many changes in disk drives or boot from different disks this table will remain stable. To use the utilities, The Information Desk etc. will require the knowledge of these device numbers; tricky to begin with but easily remembered. It is difficult for ProSel-8 users to confuse slot/drive numbers with device numbers.

The tokens are used in some ProSel screens to help identify file types. For instance if from an application screen you press a keyboard number to show the executable files on the device corresponding to that number or in the folder pointed to by a particular PREFIX chosen by pressing its corresponding number on the keypad.

U - Utilities. The following two screens show the available utilities which ProSel-8 users will recognise as CAT DOCTOR.

Figure 3

Prefixes:

```
Prefix #0 = /PROSEL/
Prefix #1 = /PROSEL/SYSTEM/
Prefix #2 = /PROSEL/PROSEL.16/
Prefix #3 =
Prefix #4 = /PROSEL/PROSEL.16/SCREENS/
Prefix #5 = /PROSEL/PROSEL.16/CAT/
Prefix #6 = /PROSEL/PROSEL.16/COMMANDS/
Prefix #7 = /PROSEL/PROSEL.16/HELP.FILES/
```

Devices:

```
Device #1 = .APPLEDISK3.5A
Device #2 = .CONSOLE
Device #3 = .DEV2
Device #4 = .DEV3
Device #5 = .DEV4
```

Tokens:

```
⊡ = DIR (subdirectory).
⊠ = S16 (ProDOS 16 application).
⊢ = SYS (ProDOS 8 application).
⊣ = EXE (ProDOS 16 executable shell file).

1 = BAS (ProDOS 8 BASIC.SYSTEM program).
* = BIN (Binary file, perhaps a P8 program).
```

Press a key. ESC for command line.

ProSel Utilities

```
Q-Quit
C-Catalog
X-Copy files
T-Type files
L-Lock files
U-Unlock files
D-Delete files
E-Exhume files
V-Verify files
R-Rename files
TAB-Menu change
S-Sort directory
F-Change file date
/-Create directory
N-Show volume names
B-Toggle bell, now: ON
P-Toggle prompting, now: ON
```

Wednesday 15-Mar-89 7:42:59 PM

Most of these utilities allow you check all the devices online by typing ? and choosing one of these by highlighting it and typing ? again gives a tree of the subdirectories on the device. Another way is to press the closed-apple key when you will be prompted for the device number.

The 'tree' method used by ProSel.

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ProSel Utilities

TAB—Main menu
Q—Quit
M—Move files
D—Dump files
F—Format a disk
E—Erase a volume
K—Compare files
C—Compare directories
L—Locate string
V—Volume copy

Wednesday 15-Mar-89 7:42:59 PM

and some other text based ProDOS utilities, to locate files is much easier, particularly on large volumes with many folders (sub directories), than is the Finder. The latter can become very cluttered with many open windows on the screen at one time and become ponderous, too.

I have been using ProSel-16 for a few weeks and find it an excellent product. Things take a little longer to load than ProSel-8 because it works under GSOS but Glen Bredon he's retained the 80 column text screen which makes it faster and easier to use than say the FINDER or other super resolution screen using program selectors. There is a new 45 page manual on disk, as well as the 72 page Pro Sel-8 manual, which is written in a simple style with a little humour making both easily read and understood.

Ken Dawson, who purchased ProSel-16 a few weeks later than I did, informs me that his version 6.4 contains new items in the main menu :-

1) Volume repair which corresponds to the Mr. Fixit utility in ProSel-8.

2) Optimiser which corresponds to Beach Comber utility in ProSel-8. The Optimiser can lead to problems which Glen Bredon thinks are due to the disk cache in GSOS. This problem occurs if the disk is written to just after optimising and leads to a 'time bomb' and slow destruction! Glen's answer is to do a shutdown immediately after optimising. This will be obligatory in later versions of ProSel-16. I still use the Beach Comber, from ProSel-8, which works perfectly.

You can update ProSel by two methods :-

1) Send your diskette back to Glen Bredon with \$10.00 plus \$5.00 for Europeans and Glen will return you

the latest version.

2) Glen Bredon, from time to time, places encrypted updates of ProSel-16 on bulletin boards which you can download or obtain from somebody else. These updates are S16 files which you can launch from ProSel or the Finder. At some stage you will be asked to place your ProSel-16 master diskette into a drive, when the program has checked the validity of your master diskette you will be prompted to replace it with a copy which will then be updated. This seems a reasonable way to make it difficult for updates to get into the 'wrong hands'. Ewen Wannop tells me that the latest update is now at version 7.0!

ProSel-16 is excellent; as good as I expected it to be. ProSel-8 users will have to get used to the change from slot/drive to device references and multiple PREFIXes but ProSel-16 will be found to be somewhat easier and better than ProSel-8, all the same. There are the odd minor bug as outlined above but Glen Bredon is continually updating and improving this product, so bugs are sure to have a short life. In the space of a few weeks ProSel-16 has moved from version 4.5 right through to version 7.0. No doubt there will soon be a new version when the much vaunted SYSTEM 5.0 appears, soon we hope.

Dave Ward

Author :Professor Glen E Bredon

1111 111111 111111
1111111111, 1111 11111111

Cost: ProSel-16 \$60.00 + \$5 for foreign postage and packing.
ProSel-8 \$40.00 + \$5
ProSel-8 upgrade to
ProSel-16 \$20.00 + \$5
ProSel-16 update \$10.00 + \$5

The manual states that these programs are only available from Glen Bredon and that orders during 1 June through 1 September may take a long time processing due to holidays!

info

Product : ProSel 16

Publisher : Glen Bredon

Available from :

1111 111111 111111
1111111111
1111 111111
1111 111111

Price : \$65.00 inclusive

Value : ★★★★★

Performance : ★★★★★

Documentation : ★★★★★

Patches to SuperCalc 3a

This patch (as a solution for DB Pearce, Feb 89, p.37) was sent to us by Dennis Doms of A2 Central

The following procedure will transfer SuperCalc3a to a 3.5 disk and patch two files to enable printing, plotting and sideways printing on an ImageWriter II connected to an Apple IIGS via the built in serial port #1. Basically the patch replaces the direct access to the Super Serial Card via its registers with access to the IIGS serial port via the built-in firmware. There are separate patches for versions 1.0 and 1.1. The data directory path is limited to 34 characters due to the placement of the patch.

Harry K Sugar



Format a 3.5 disk, name it /SUPERCALC, and copy all the SuperCalc3a files from all the original disks to /SUPERCALC.

Run SuperCalc3a either from the Finder by double-clicking the SC3.SYSTEM icon or from BASIC.SYSTEM in PRODOS 8 by typing "/SUPERCALC/SC3.SYSTEM".

Set up SuperCalc3a for the Super Serial Card as follows:

Type: /GI (down arrow)(return)(ctrl-z)(ctrl-z)
Type: /GGD and check that the ImageWriter is selected (ImageWriter II on the black and white menu for version 1.1). If not, select it. Note: You will be able to switch back and forth between the black and white and color versions after the patch has been made on version 1.1)
Type: /L(return)R-/SUOERCALC(ctrl-z) to tell SuperCalc3a where the graph overlays are.
Type: /L(return)C to set up the data directory path to your data disk.
Type: /GKY to save these settings.
Type: /QY to exit SuperCalc3a.

Run SIDEWAYS from the Finder by double-clicking the SIDEWAYS icon or from the BASIC.SYSTEM in PRODOS 8 by typing "/SUPERCALC/SIDEWAYS". Type "I" when you see the SIDEWAYS copyright screen to enter the install mode.

Set up SIDEWAYS for the ImageWriter and the Super Serial Card as follows:

Type: 1(return)2(return)2(return)2(return)

Note that the slot # and data bits are already set to 1 and 8, respectively.

Type: 6(return)(ctrl-q) to exit SIDEWAYS.

Make sure /SUPERCALC is in a drive and from BASIC>SYSTEM in PRODOS 8 execute the SCEXEC file by typing "-SCEXEC0" for version 1.0 or "-SCEXEC1" for version 1.1. This will patch the files SC3.BIN and SIDEWA.P.

THAT'S IT! As an added bonus, MouseText characters will also print from spreadsheets, but not in graphs or sideways printing.

(patch for version 1.0)

```
PREFIX /SUPERCALC
UNLOCK SC3.BIN
BLOAD SC3.BIN, A$1000, L$5000
CALL -151
5620:A9 00 20 00 C1 A9 09 20 07 C1 A9 4C 20 07 C1
A9 44 20 07 C1 18 60
5664:C9 09 F0 09 C9 89 F0 20 20 07 C1 38 60
5671:A9 09 20 07 C1 A9 01 20 07 C1 A9 09 20 07 C1
A9 01 20 07 C1
5685:A9 09 20 07 C1 38 60
568C:A9 89 20 07 C1 A9 01 20 07 C1 A9 89 20 07 C1
A9 01 20 07 C1
56A0:A9 89 20 07 C1 38 60
56A7:C9 80 90 02 80 04 20 64 4E 60 48 A9 1B 20 07
C1 A9 26 20 07 C1
56BC:68 29 7F 09 40 20 07 C1 A9 1B 20 07 C1 A9 24
20 07 C1 38 60
BSAVE SC3.BIN, A$1000, L$5000
BLOAD SC3.BIN, A$1000, L$5000, B$F000
3B8E:20 A7 4E EA EA EA EA EA EA
BSAVE SC3.BIN, A$1000, L$5000, B$F000
LOCK SC3.BIN
UNLOCK SIDEWA.P
BLOAD SIDEWA.P, A$800
D80:48 A9 80 F0 15 20 00 C1 A9 09 20 07 C1 A9 4C
20 07 C1 A9 44 20 07 C1
D97:0E 82 0D 68 C9 09 F0 09 C9 89 F0 20 20 07 C1
18 60
DA8:A9 09 20 07 C1 A9 01 20 07 C1 A9 09 20 07 C1
A9 01 20 07 C1
DBC:A9 09 20 07 C1 18 60
DC3:A9 89 20 07 C1 A9 01 20 07 C1 A9 89 20 07 C1
A9 01 20 07 C1
DD7:A9 89 20 07 C1 18 60
BSAVE SIDEWA.P, A$800, L$381E
LOCK SIDEWA.P
```

(patch for version 1.1)

```
PREFIX /SUPERCALC
UNLOCK SC3.BIN
BLOAD SC3.BIN, A$1000, L$5000
CALL -151
4965:80 28 C9 09 F0 09 C9 89 F0 05 20 07 C1 38 60
48 A9 09 20 07 C1
497A:A9 01 20 07 C1 68 20 07 C1 A9 01 20 07 C1 A9
09 20 07 C1 38 60
498F:A9 00 20 00 C1 A9 09 20 07 C1 A9 4C 20 07 C1
A9 44 20 07 C1
49A3:18 60 C9 80 90 02 80 04 20 76 41 60 48 80 4E
4A00:A9 1B 20 07 C1 A9 26 20 07 C1 68 29 7F 09 40
20 07 C1 A9 1B
4A14:20 07 C1 A9 24 20 07 C1 38 60
BSAVE SC3.BIN, A$1000, L$5000
BLOAD SC3.BIN, A$1000, L$5000, B$F000
4BA6:20 A5 41 EA EA EA EA EA EA
BSAVE SC3.BIN, A$1000, L$5000, B$F000
LOCK SC3.BIN
UNLOCK SIDEWA.P
BLOAD SIDEWA.P, A$800
D80:48 A9 80 F0 15 20 00 C1 A9 09 20 07 C1 A9 4C
20 07 C1 A9 44 20 07 C1
D97:0E 82 0D 68 C9 09 F0 09 C9 89 F0 20 20 07 C1
18 60
DA8:A9 09 20 07 C1 A9 01 20 07 C1 A9 09 20 07 C1
A9 01 20 07 C1
DBC:A9 09 20 07 C1 18 60
DC3:A9 89 20 07 C1 A9 01 20 07 C1 A9 89 20 07 C1
A9 01 20 07 C1
DD7:A9 89 20 07 C1 18 60
BSAVE SIDEWA.P, A$800, L$381E
LOCK SIDEWA.P
```



Pascal example

This example was held over from the article 'Pascal Power' by Dave Miller in the February issue of the magazine

This is a rather complicated program which utilises a binary tree to order and search entries typed in by the user. It provides a very simple dictionary which allows words to be tested against the stored dictionary and to be added to the dictionary.

The program assumes that the dictionary file already exists. The file can be created from an editor (it can be empty).

The tree is built up by moving down the tree until the word is found in the tree or until the end of the tree is found. If the end of the tree is met then the word being tested is not in the tree and so is inserted in a new node which is linked to the node directly above. To test whether the word is in the tree the first node's value is compared against the word. If they match then the word has been found but if they don't match then the test is performed on the first node of one of the two subtrees leading from the node.

If the word is alphabetically less than the word in the node then the left-hand subtree is examined, otherwise, (the word is alphabetically greater than the word in the node), the right-hand subtree is examined.

If you think about this for a moment you will see that the tree will be ordered with respect to the node at the tree's top: all words in the nodes to the node's left will be alphabetically less than the node's word and all words in the nodes to the node's right will be alphabetically greater than the node's word.

You will also see that each subtree is ordered the same with respect to the node at its top (another recursive feature!).

If you don't believe me then apply the following search procedure using a pencil and paper. Define the tree to be a pointer which is initially nil. Perform the following for each of the words to search/insert:

```
if pointer to node is nil then
  we are at the tree's end - create new node &
  address it in pointer
  save word in node & set its pointers to nil
otherwise
  compare against word in node addressed by
  pointer
  if words are equal then
    word has been found in tree
  else if word is less than word in node then
    recall this procedure using the left-hand
    subtree
  else (word is greater than word in node)
    recall this procedure using the right-hand
    subtree
```

This algorithm is called an Insertion Sort because it sorts entries by inserting them into a binary tree. It is very efficient and provides an elegant solution to a sometimes tricky problem.

Program Dictionary (input, output, dictfile):

(program to read in a dictionary and sort it, then accept words from the user inserting unmatched words into the dictionary or signalling matched words if words have been added to the dictionary then it is saved to disc - this program is written in standard Pascal and so should work on every implementation of Pascal (except that the dictionary file name may have to be changed to cater for different operating systems) the words in the brackets above list the program's input and output files)

```
const (define global constants)
  wordlength = 80;
  {handle 80-character words maximum}
  dictname = 'DICT.TEXT';
  {define the dictionary file name}

type (define global types)
  wordstring = packed array [1..wordlength] of
  char; {define word}

  nodeptr = ^node;
  {define the tree - point to a node}
  node = record {define a node}
    word: wordstring; {store a
    word} left,
    right: nodeptr {address the
```

```
      next two nodes)
    end;
  var {define global variables}
    dict: nodeptr; {define the dictionary as a
    tree}

  function length (word: wordstring): integer;
  {this integer function returns the actual length of
  the word - excluding trailing spaces}

  var
    len: integer;

  begin
    len := wordlength; {start at right-hand end and
    work leftwards}
    while (len > 1) and (word [len] = ' ') do
      len := pred (len); {equivalent to len := len
      - 1}
    if (len = 1) and (word [1] = ' ') then
      length := 0 {empty word}
    else
      length := len {return result to caller}
    end {length};

  procedure readword (var infile: text; var word:
  word string);
  {this reads in a word from the specified file -
  note that the parameters are both "var" because the
  file is being read (the file pointer will change)
  and the word is returned - "infile" is a text file}

  var
    i: integer;
    c: char;

  begin
    {clear the word before reading}
    for i := 1 to wordlength do
      word [i] := ' ';

    {loop until the maximum number of characters
    read of until the end of line or end of file be
    met - "eoln" is true on end of line and "eof" is
    true on end of file}

    i := 1;
    while (i <= wordlength) and (not eoln (infile))
    and (not eof (infile)) do
      begin
        read (infile, c); {read in a character}
        word [i] := c; {save the read character}
        i := succ (i) {equivalent to i := i + 1}
      end;

    if not eof (infile) then
      readln (infile) {skip to next line of the
      input file}

  end {readword};

  subroutine writeword (var outfile: text; word:
  wordstring);

  {subroutine to write out a word to the specified
  file - note that the word is not a "var" parameter
  because it is being read only and not written to}

  var
    i: integer;

  begin
    {write out the specified number of characters -
    note that the loop is not executed if function
    "length" returns 0}
    for i := 1 to length (word) do
      write (outfile, word [i]);
    {move to the next line}
    writeln (outfile)
  end {writeword};

  procedure insert (var dict : nodeptr; word: word
  string; var found: Boolean);

  {this inserts the word into the dictionary tree or
  returns that the word is already in the tree - note
  that "dict" is a "var" parameter because the
  dictionary tree may be modified}

  begin
    if dict = nil then
      begin
```



```

(the tree is empty - create a new node and
save the word allocate a node and set "dict"
to point to the node - this performs the
actions of creating a new node AND of
linking it to the tree because "dict" is
really a "left" or "right" pointer of the
node "above" this one, except for a
completely empty tree)

new (dict);
(save the word in the node and clear its
subtree pointers - note the method of using
the pointer - the ^ means "use the address
of")
dict^.word := word;
dict^.left := nil;
dict^.right := nil;
(indicate that the word was not found)
found := false
end
else (test to see if word exists)
  if word = dict^.word then
    found := true (word found)
  else (word not found - test subtrees)
    if word < dict^.word then (test left
      subtree)
      insert (dict^.left, word, found)
    else (search right subtree)
      insert (dict^.right, word, found)
    end
  end
end (insert);

procedure writedict (dict: nodeptr);
(this writes out the dictionary to a file)

var
  dictfile: text; (define the file as a text
  file)

procedure writenode (dict: nodeptr);
(this is a NESTED PROCEDURE defined in and
callable from "writedict" ONLY - note that
the variable "dictfile" is still accessible
in this procedure because it is defined in
the outer procedure (c.f. ALGOL's blocks))

begin
  if dict <> nil then
    begin
      (for non-nil tree write out the left-hand
      tree, then the current node's word and
      then the right-hand tree - because of
      the ordering of the data in the tree
      this writes out the data in
      alphabetical order!)
      writenode (dict^.left);
      writeword (dictfile, dict^.word);
      writenode (dict^.right)
    end
  end (writenode);

begin (writedict)
  (open the file for writing - note that
  "dictname" is global to the whole program)
  rewrite (dictfile, dictname); (write to the
  file)
  writenode (dict); (write out the dictionary)
  close (dictfile); (close the file)
  (close (dictfile, lock) <- required for UCSD
  Pascal)
end (writedict);

procedure readdict (var dict: nodeptr);
(this reads the dictionary from a file)

var
  dictfile: text; (define the file as a text
  file)
  found : Boolean;
  word : wordstring;

begin
  (open the file for reading - note that
  "dictname" is global to the whole program)
  reset (dictfile, dictname); (read from the
  already existing file)
  (continue until the end of the input file is met
  - eof returns true when the end of the specified
  file is met)
  while not eof (dictfile) do
    begin
      readword (dictfile, word); (read in a word)
      if length (word) > 0 then

```

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Apple II Library News

We have two more disks this month added to the library. The first of these disks, 2GS013, contains a selection of songs for Music Studio and for DiversiTune and is only suitable for the Iigs.

Included on this disk is the complete Beethoven 8th symphony for DiversiTune. It takes nearly 20 minutes to play all the way through!

The second disk, 2GS014, contains the complete set of Apple II Technical Notes and can be used on any 3.5 disk ProDOS system. The files have been compressed to make them all fit onto the one disk. ShrinkIt is included on the disk to allow easy extraction into text file format and LIST Utility is also included to allow the files to be viewed or printed.

ShrinkIt is rapidly taking over from BLU as the de-facto standard for file compression. ShrinkIt prepares true library format files, and by using the Lempel-Ziv-Huffman algorithm for compression, compacts to a greater degree than was possible with BLU. Files compressed using ShrinkIt have the suffix .SHK. ShrinkIt will also extract .BNY, .BQY and ACU files. We are now committed to using ShrinkIt on TABBS, where you will now find files compressed in both .BLU and .SHK formats. If you do not have ShrinkIt already, either download from TABBS or order Disk 2GS014 from the library.

We hope to announce a new ProDOS 5.25 disk library for the Apple II shortly. This is an addition to the Apple II library that has been long overdue.

Refer to the current price list and order through the PO Box in Liverpool.

Disk 2GS014

/LIBRARY.14/			
-READ.ME.FIRST	TXT	4	16-JUL-89
-SHRINKIT.65C02	DIR	1	16-JUL-89
-SHRINKIT.SYSTEM	SYS	1	31-MAR-89
-SHRINKIT	SYS	73	1-MAY-89
-SHRINKIT.DOCS	TXT	60	1-MAY-89
-SHRINKIT.6502	DIR	1	16-JUL-89
-IPLUS.SHRINKIT	SYS	24	1-MAY-89
-UNSHRINK.6502	DIR	1	16-JUL-89
-IPLUS.UNSHRINK	SYS	25	1-MAY-89
-LIST.PROGRAM	DIR	1	16-JUL-89
-LIST.SYSTEM	SYS	67	1-APR-89
-LIST.DESCR	AWP	38	1-APR-89
-AIIC.NOTES.SHK	LIB	27	16-JUL-89
-AIIE.NOTES.SHK	LIB	117	16-JUL-89
-AIIE.GRAPH.SHK	LIB	115	16-JUL-89
-ATLK.NOTES.SHK	LIB	6	16-JUL-89
-IIGS.NOTES1.SHK	LIB	118	16-JUL-89
-IIGS.NOTES2.SHK	LIB	121	16-JUL-89
-IIGS.NOTES3.SHK	LIB	82	16-JUL-89
-IMWR.NOTES.SHK	LIB	3	16-JUL-89
-FLTYP.NOTES.SHK	LIB	62	16-JUL-89
-GSOS.NOTES.SHK	LIB	30	16-JUL-89
-MEMX.NOTES.SHK	LIB	6	16-JUL-89
-MISC.NOTES.SHK	LIB	65	16-JUL-89
-MOUS.NOTES.SHK	LIB	24	16-JUL-89
-PASC.NOTES.SHK	LIB	91	16-JUL-89
-PDOS.NOTES.SHK	LIB	96	16-JUL-89
-SMPT.NOTES.SHK	LIB	19	16-JUL-89
-UDSK.NOTES.SHK	LIB	20	16-JUL-89
-TN.MAR.89.SHK	LIB	78	10-JUN-89
-TN.MAY.89.SHK	LIB	96	10-JUN-89

```

begin
  insert (dict, word, found); {insert word
    into dictionary}
  {if a duplicate word (it's already in the
    dictionary) issue a warning - note that
    "output" is the VDU}
  if found then
    writeln (output, 'Duplicate word
      ignored')
  end
end;
{close the file}
close (dictfile)
end (readdict);

function updatedict (var dict: nodeptr): Boolean;
{function to allow the user to enter words for
  matching/insertion in the dictionary - note that
  the dictionary pointer is "var" because the dic-
  tionary may be modified - this function returns a
  Boolean flag indicating whether the dictionary has
  been updated or not}
var
  newentry,
  found : Boolean;
  word : wordstring;

begin
  {assume that no new entries have been added}
  newentry := false;
  {loop until the user terminates the run by
  pressing CTRL-C (this is the end of text
  character) - "input" is the keyboard}

  while not eof (input) do
    begin
      {issue prompt to user without carriage
      return}
      write (output, 'Enter word (CTRL-C to end):');
      {read word from the keyboard}
      readword (input, word);
      if length (word) > 0 then
        begin
          {a word has actually been entered so
          match/insert it}
          insert (dict, word, found);
          if found then
            {the word has been found in the
            dictionary}
            writeln (output, 'Word found in
              dictionary')
          else
            begin
              {the word has been inserted into the
              dictionary}
              writeln (output, 'Unmatched word
                inserted in dictionary');
              {indicate that the dictionary has been
              modified}
              newentry := true
            end
          end
        end
      end;
      {indicate whether the dictionary has been
      updated or not}
      updatedict := newentry
    end (updatedict);

  begin {Dictionary}
    dict := nil; {clear the dictionary}
    readdict (dict); {read in the dictionary}
    {if the dictionary has been updated by the user
    then write the new dictionary out}
    if updatedict (dict) then
      writedict (dict)
    end {Dictionary}.

  {This is a rather complicated example program
  because I wanted to give readers something they can
  type in to play with. This will work in UCSD
  Pascal}

```

Dave Miller

□ We shall print the second programming example from Dave Miller in the next issue. This second example was referred to in the article on 'C' in the June issue of Apple2000.

/LIBRARY.13/

-M. STUDIO.SONGS		DIR	4	3-JUN-89
-BEETHO9.SNG	BIN		5	15-JUL-88
-ZOO.SNG	BIN		11	15-JUL-88
-WOMAN.SNG	BIN		10	15-JUL-88
-WITCHY.SNG	BIN		20	15-JUL-88
-WEWRL.SNG	BIN		26	15-JUL-88
-WATERM.SNG	BIN		9	15-JUL-88
-WALRUS.SNG	BIN		15	15-JUL-88
-WALKER.SNG	BIN		10	15-JUL-88
-VALSE.SNG	BIN		8	15-JUL-88
-TIME.SNG	BIN		13	15-JUL-88
-THYWORD.SNG	BIN		9	15-JUL-88
-THATSWAY.SNG	BIN		30	15-JUL-88
-TALKTOME.SNG	BIN		15	15-JUL-88
-TAKE5.SNG	BIN		13	15-JUL-88
-SWEYEASY.SNG	BIN		9	15-JUL-88
-STUDIOM.SNG	BIN		14	15-JUL-88
-STRAIGHT.SNG	BIN		10	15-JUL-88
-STEIMO.SNG	BIN		17	15-JUL-88
-STEALING.SNG	BIN		14	15-JUL-88
-STEAL.SNG	BIN		8	15-JUL-88
-STARWARS.SNG	BIN		6	15-JUL-88
-STARWARI.SNG	BIN		6	15-JUL-88
-STARTREK.SNG	BIN		5	15-JUL-88
-STAIR2.SNG	BIN		23	15-JUL-88
-SPINNING.SNG	BIN		9	15-JUL-88
-SOON.SNG	BIN		14	15-JUL-88
-SNDMUSIC.SNG	BIN		6	15-JUL-88
-SMUT.SNG	BIN		18	15-JUL-88
-SIXTY.SNG	BIN		19	15-JUL-88
-SILTNITE.SNG	BIN		10	15-JUL-88
-SILENTRU.SNG	BIN		10	15-JUL-88
-SIDY.SNG	BIN		11	15-JUL-88
-SIDESTEP.SNG	BIN		20	15-JUL-88
-SEPTEN.SNG	BIN		10	15-JUL-88
-SCOTCH.SNG	BIN		7	15-JUL-88
-SAIGON.SNG	BIN		17	15-JUL-88
-CHOPIN.SNG	BIN		21	15-JUL-88
-JAZZCOMBO.WBNK	BIN		130	15-JUL-88
-ENTERTAINER.SNG	BIN		12	1-MAR-87
-BINKS.SNG	BIN		20	9-MAY-87
-SEARCH.SNG	BIN		22	25-APR-87
-COL.GAUD.SNG	BIN		8	16-SEP-87
-FOG.MOUNT.SNG	BIN		7	24-OCT-87
-RED.ROVER.SNG	BIN		8	24-OCT-87
-FOLK.SND	BIN		3	24-OCT-87
-MIND.SNG	BIN		34	26-FEB-88
-DIVERSITUNES		DIR	3	17-JUN-89
-INCLINE	SD5		19	16-NOV-88
-TOC.FUGUE.BACH	SD5		36	16-NOV-88
-EL.CONDOR.PASA	SD5		24	16-NOV-88
-SILENT.NIGHT.1	SD5		7	16-NOV-88
-LOOK.SHARP.N	SD5		6	21-NOV-88
-MAKE.ME.LOSIT	SD5		28	22-NOV-88
-HEART.MEDLEY	SD5		11	17-NOV-88
-EXODUS	SD5		15	4-NOV-88
-CLASSICAL.GAS	SD5		14	4-NOV-88
-REVOLUTIONARY	SD5		33	4-NOV-88
-POLKA.POPPERS	SD5		15	16-NOV-88
-UNDER.EAGLES	SD5		28	16-NOV-88
-MORE	SD5		11	4-NOV-88
-PETER.PAN	SD5		16	4-NOV-88
-LATIN	SD5		19	16-NOV-88
-ROMEO.JULIET	SD5		12	4-NOV-88
-JVB	SD5		15	4-NOV-88
-JUBA	SD5		32	4-NOV-88
-ENTERTAINER	SD5		37	4-MAR-89
-DO.U.WANT.TO.KN	SD5		13	24-SEP-88
-WITH.A.LITTLE.H	SD5		20	24-SEP-88
-LET.IT.BE	SD5		28	24-SEP-88
-MICHELLE	SD5		15	24-SEP-88
-TUESDAY.AFTNOON	SD5		29	24-SEP-88
-SOMEWHERE.OUT..	SD5		18	24-SEP-88
-READY.TO.TAKE..	SD5		17	24-SEP-88
-RIDERS.ON.STORM	SD5		21	24-SEP-88
-ST.ELSEWHERE	SD5		14	24-SEP-88
-BEETHOVEN.8TH.S	SD5		300	10-JUN-89

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The Nibbler

First of all I have some good news for all Apple2000 members. Mark Whelan of Bidmuthin Technologies tells me that for a limited period, they will pay the VAT on any orders they receive from members. You must produce proof of membership, either by quoting your membership number, or a photo-copy of your membership card. This of course means that you pay the price you see, and do not have to add the VAT as well. This is all good news. Are there any other dealers willing to offer such a discount?

Mark also tells me that they are now taking orders for the new Vulcan hard drive for the Apple //e and IIs computers. This hard drive replaces the standard power pack, and not only gives you a 40 mb hard drive, but a boosted fan cooled power pack as well! The Vulcan 40

mb clocks in at £595.00 ex VAT. You will see that we have reviews of the Cirtech Diamond drive as well in this issue. If you intend using this drive on the Apple II, and have already got a SCSI card, get hold of the Macintosh version. Once you have the thing connected, go to your favourite format program and format for ProDOS. If you buy the 48 mb version, you will need to follow the instructions for partitioning that Ewen gave in his article on p38 of the April issue.

This is not the only drive that Cirtech have had up their sleeve, we show a sneak preview of their

drive than this, but it looks very much like "Watch this space!".

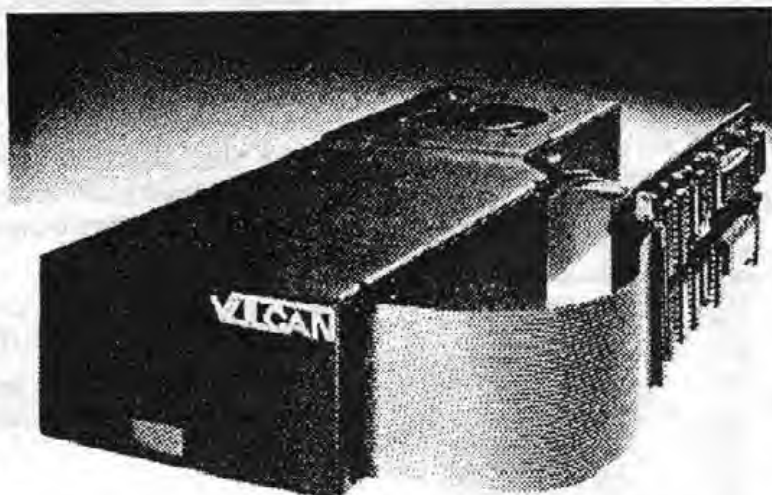
After all this talk of hard drives, I was amused to see an article appear on TABBS telling you how to build your own SCSI tape streamer. I suppose this had to be the next logical step from expanding a hard drive upwards to enormous megabytes. Backing up a 20 mb drive is no joke at around

new Hard Card. This looks like a wafer thin drive bolted onto the back of the Cirtech SCSI card. It is small enough to fit any slot in any Apple II machine! Of course you still get the standard SCSI port connector on the back as well. We know no other details of the

menting with a 10 mhz version. I wonder whether they will beat the GS Zip chip to the market, or even the launch of the much awaited GS+. Meanwhile, some users of third party extended Ram cards for the IIs are finding that the Ram chips on these cards just cannot keep up with the TransWarp and cause all kinds of problems. Those with the standard Apple card seem to have no trouble so far.

The software everyone is going to be talking about soon is undoubtedly AppleWorks 3.0. Sneaked upon us when we least expected it, AppleWorks 3.0 sounds like a dream come true. The original AppleWorks, in its two major forms, was the standard by which all else was judged. It is said that more copies of AppleWorks have been sold and are in use round the world than Lotus 123 on the IBM. It is the one program that nearly all users own and use. However, there were

some niggling points missing from the original program. Some of these were put right by using TimeOut modules, but many were due to the age of the original concept. We nowadays expect much more from a program in the way of friendly quick access. It appears as though Claris and Beagle have put this all to rights with a major update to the original program. Of course AppleWorks 3.0 will work on any //e, //c



Applied Engineering Vulcan Drive for the //e and IIs

or IIs computer. I predict it will entrench itself firmly in the IIs camp as well as the //e and //c one. AppleWorks GS is still just far too slow to be a realistic alternative.

I have been taken to task by Bob Docker for my caustic and flip-pant remarks concerning the IBM XT's. He observes that the XT is very outdated, and should not be mentioned in the same breath as the 80286 and 80386 driven IBM and clone machines of today. He suggests that his upgrade path from his present Apple II Euro-plus should be an 80286 driven clone with 80287 maths co-proc-

30 disks, but think of a 48 mb or even a 62 mb unit! We will try and include this article in the next issue of room permits. Meanwhile, get your modems out and take a look on TABBS.

I see Ewen has now more than 1000 files on TABBS, and he tells me that the hard drives are only just over a third full! It would take a month of Sundays to download all that material even if you did have a V22bis modem.

The TransWarp GS seems to have taken off in a big way. It gives that much needed boost of speed to the IIs, however, I hear on the grapevine that AE are experi-

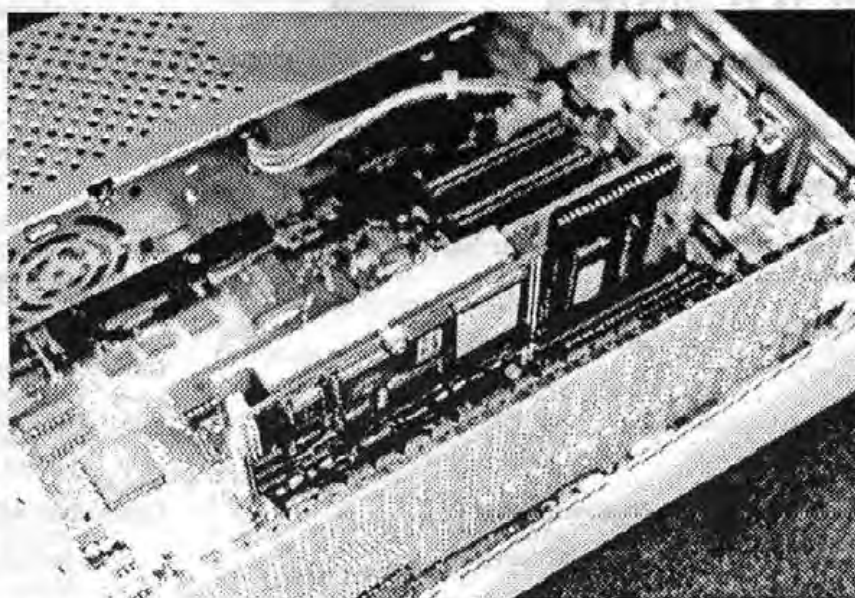
essor, 80 mb hard disc, 3.5 inch 1.44 mb floppy, 5.25 inch 1.2 mb floppy, 24 pin dot matrix printer and VGA graphics display. He says that for a price of £2500 this combination cannot be beaten by the Mac. He also attacks the Apple route as being devoid of software suitable for the 'real' world, and he accuses Apple of having a chip on their shoulder over the huge costs that are passed on to the end user, the customer. He mentions in passing that he would have preferred the Apple route, but as he has been unable to make his Apple II Europlus write a letter as yet, he had to resort to his typewriter to write the letter.

I take his points, but am amazed by his lack of perception or critical awareness of the basic differences between the IBM and the Macintosh. Bob wants a computer to do one thing only, to operate statistical packages. If he can find the software he wants on the IBM, and he is happy with the learning curves he will have to endure and the low operator efficiency on that machine, then good luck to him. He certainly will not find the equal in the Apple world for the price he mentions.

This however is not the point as any Macintosh power user will tell you. We want our machines to do many tasks. To do these with the minimum of time involved in learning curves. To maximise on operator efficiency. To have low maintenance costs. To have high output quality, and above all to do this with a sense of humour. All of this excites the user to achieve more and to develop much further than his or hers first goal. Bob signs himself '(bandleader) (computer moron when it comes to programming in Basic)', but with a Macintosh he could program with Hypercard and connect his instruments to midi interfaces. Could the IBM offer him that? He would also of course been able to

use his WYSIWIG Macintosh screen to write a more graphically pointed letter.

The high cost of Apple machines



Sneak Preview of the Apple II Cirtech Hard Card

and software is undeniable. However, much of this cost is ploughed back into research and development at Cupertino. Who else publishes a 'Human Interface Guidelines' for their computer?

I have tried to use a variety of IBM style machines. They do actually work of course, and if you only want to run one software package, then yes they do as they set out to do. However, as an experienced PageMaker user on the Macintosh, I was horrified when I tried to run Ventura Publisher. I could not get it to change a default directory and load a text file after half an hour struggling with the manual. On the Macintosh I simply point and click, and interpret plain English commands on the screen.

If I purchase a new program for the Macintosh, I am running it without the manual as soon as I can put the disk into the drive (the standard approach of the Macintosh means I only need one drive not two different sizes!). On the IBM I need to read the manual extremely carefully to work out what the function keys do this time round on a new program.

I pay less for the IBM or clone, but I pay dearly for it in wasted and misused time.

Thank you for your letter Bob, I suggest you upgrade to a //e with an ImageWriter printer, AppleWorks and Timeout SuperFonts.

Most of this is available on the secondhand market. It won't cost you an arm and a leg, and you will have fun typing your letters in

WYSIWIG! As a musician, I am surprised that you have not thought of using a IIGs with DiversiTune as a 32 track midi recorder. This is the most remarkable combination I have heard recently and makes the IIGs sound like it has never done before. But then I could go on and on ...

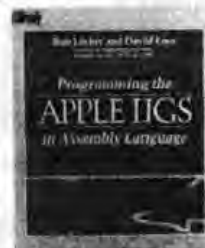
It takes all sorts to make a world, and all sorts of machines as well. The IBM has its uses, after all its customers cannot

be wrong can they? I shall stick with the machine that suits me best.

The Nibbler



Program the IIGs!



Programming the Apple IIGs in Assembly Language by Ron Lichty and David Eyes provides the easiest-to-follow, most complete, step-by-step guide to creating full-fledged Apple IIGs applications. Use APW or ORCA/M to develop, in stages, a Hello, World program from an 8-line program that prints on the text screen to a full-blown desktop program with menu bar, dialogs, icons, and multiple, sizeable, scrollable windows! 550 pages includes complete reference section. Nibbler editor David Krathwohl calls it "a must for would-be Apple IIGs programmers ... a jump start for beginners and experienced programmers alike." Call APPLE technical editor Cecil Fretwell found it "addictive ... the more I read, the more fascinated I became ... In my opinion, this book will fill a big gap in the world of the Apple IIGs." Diversi- software author Bill Basham maintains, "This book belongs in every Apple IIGs programmer's library." 29.95

Programming the 65016 (Including the 6502, 65C02, and 65802) by David Eyes and Ron Lichty is the most advanced, most complete, most accurate guide to programming the Apple IIGs processor. This is the standard. Over 600 pages. 24.95

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///Brady

Telecom Gold Databases and other facilities



To use any of these facilities on The Force/Telecom Gold, go to the Gold prompt '>' and type the selection shown against the prompt. For further selection type the route indicated.

Many of these facilities incur time or access charges. You should read the related Info files (e.g. >Info Infomat) for further details of the facility and its related charges.

Accounting Industry

>Infomat

Advertising Industry

>Infomat
>Marketing Week
>Profile
-(select Mags)

Aerospace Industry

>Kompas
>Profile
-(select MCC)

Agriculture

>Infomat

Appointments

>Infomat
>Profile
-(select UK News)

Automotive Industry

>Infomat
>Kompas
>Profile
-(select MCC)

Acquisitions

>Infomat
>Profile
-(select MCC, FT)

Aviation Industry

>Infomat
>Profile
-(select MCC)

Balance Of Payments/trade

>Infomat
>Profile
-(select MC, EON, FT)

Banking Industry

>Infomat

Broadcasting Industry

>Profile
-(select Media)

Building Societies

>Infomat
>Marketing Week
>Profile
-(select FTB, FT, or MCC, Marketing)

Business Advice

>Aims
>Grants
>Profile
-(select FT, Int Biz, UK-biz)

Business Equipment

>Fintech
>Infomat
>Kompas
>Profile
-(select FTT)

Business Grants

>Aims
>Grants

Cad/cam Industry

>Fintech
>Infomat
>Profile
-(select FTT)

Car Hire Market

>Euromonitor

Chemical Industry

>Infomat
>Profile
-(select MCC)

Commercial Property

>Infomat
>Profile
-(select MCC)

Commodity News

>Infomat
>Profile
-(select MCC)

Commodity Prices

>Infomat
>Petroleum Monitor

Common Agricultural Policy

>Infomat
>Justis
>Profile
-(select Int Biz, SWB, MCC, FTB)

Communications Industry

>Fintech
>Infomat
>Profile
-(select FTT, MCC)

Company Accounts

>ICC
>Infocheck
>Jordans
>Kompas
>Infomat
-(select JDN, MCC)

Company News

>Infomat

>Profile
-(select MCC, FT)

Company Performance

>ICC
>Infocheck
>Infomat
>Jordans
>Profile
-(select MCC, FTT)

Company Product Listing

>Kompas

Computer Industry

>Fintech
>Infomat
>Profile
-(select MCC, FTT)

Construction Industry

>Infomat
>Kompas
>Profile
-(select MCC)

Consumer Affairs

>Justis
>Profile
-(select Mags, CMI, UK News)

Consumer Finance

>Euromonitor
>Infomat
>Marketing Week

Consumer Goods

>Euromonitor
>Infomat
>Kompas
>Marketing Week
>Profile
-(select CMI, Mags)

Confectionery Market

>Euromonitor
>Infomat
>Marketing Week
>Profile

Contracts Awarded

>Infomat
>Profile
-(select TED)

Cosmetics And Toiletries

>Euromonitor

Charge Cards Market

>Euromonitor

Credit Rankings

>Infocheck

Current Affairs

>Profile
-(select UK News, Int News)

Customs & Excise Reg's

>Grants
>Justis

Datacommunications

>Fintech
>Infomat
>Profile
-(select MCC, FTT)

Data Protection

>Fintech
>Infomat



>Justis

Direct Marketing

>Marketing Week
>Profile
-(select Mags)

Diy Market

>Euromonitor

Domestic Appliances

>Euromonitor
>Kompass
>Profile
-(select CMI, Mags)

Drink Industry

(alcoholic And Non-alcoholic)

>Euromonitor
>Infomat
>Profile
-(select Mags, CMI)

Economic Indicators

>Infomat
>Profile
-(select FTB)

Economic News

>Infomat
>Profile
-(select Int Biz)

EEC

>Infomat
>Justis
>Profile
-(select SPH, Celix, Int Biz)

Electricity

>Profile
-(select FTE)

Electronics Industry

>Fintech
>Infomat
>Profile
-(select MCC, FTT)

Employment Law

>Justis

Energy

>Infomat
>Petroleum Monitor
>Profile
-(select FTE)

Engineering

>Infomat
>Profile
-(select MCC)

Enterprise Zone

>Grants

Environmental Issues

>Infomat
>Profile
-(select GDN, Int News, NS)

European Economic Community

>Profile
-(select Int Biz, Int News)

European News

>Infomat
>Profile
-(select Euro News, MCC)

European Law

>Justis
>Profile
-(select TIM)

Executive Changes

>Infomat
>Profile
-(select UK New, FT)

Exhibitions

>Marketing Week
>Profile
-(select Mags)

Exporting

>Grants
>Profile
-(select TED, Int Biz, MCC)

Farming Industry

>Infomat
>Profile
-(select MCC)

Fast Foods Markets

>Euromonitor
>Infomat

Financial Services

>Infomat
>Marketing Week
>Profile
-(select MCC, FTB, Int Biz)

Fishing Industry

>Infomat

Food Industry

>Euromonitor
>Infomat
>Profile
-(select MCC)

Foreign Exchange Markets

>Profile
-(select FTB)

Foreign Markets/trade

>Infomat
>Profile
-(select MCC, FTB, SWB)

Foreign News

>Profile
-(select Int News, ECN)

Forestry Industry

>Infomat

French Consumer Markets

>Euromonitor

Futures

>Profile
-(select FTB)

Garden Markets

>Euromonitor

Gas

>Petroleum Monitor
>Profile
-(select FTE)

GNP/GDP

>Economist

Government Information

>Aims
>Grants
>Profile

Grants For Business

>Aims
>Grants

Health And Safety Legislation

>Justis
>Profile
-(select CMI, TMS, UK News)

Health Care Industry

>Profile
-(select MCC)

Home Computer Market

>Euromonitor

Household And Diy

>Euromonitor

Incentives For Business

>Aims
>Grants

Industry Performance

>Infomat
>Profile
-(select MCC)

Industrial Relations

>Infomat
>Justis
>Profile
-(select UK Biz, MCC)

Inflation Rates

>Profile
-(select MCC, UK Biz)

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Information Technology Industry

- >Fintech
- >Infomat
- >Profile
- (select MCC, FTE)

Insurance Industry

- >Profile
- (select MCC, FTB)

Interest Rates

- >Profile
- (select FTB, MCC)

International News

- >Profile
- (select Int News)

International Current Affairs

- >Profile
- (select Int News)

Investment Industry

- >Infomat
- >Profile
- (select MCC, FTB)

Italian Consumer Market

- >Euromonitor

Japanese Business News

- >Profile
- (select ASN, FTB, MCC)

Japanese Financial News

- >Profile
- (select ASN, MCC, FTB)

Japanese Political News

- >Economist
- >Profile
- (select ASN, SWB, TIM)

Legislation

- >Infomat
- >Justis
- >Profile
- (select TIM)

Leisure Industry

- >Euromonitor
- >Infomat
- >Profile
- (select MCC, Mags)

Local Government News

- >Aims
- >Grants

Manufacturing Industry

- >Infomat
- >Kompass
- >Profile
- (select MCC)

Marketing

- >Infomat
- >Marketing Week
- >Profile
- (select Mags)

Media Industry

- >Marketing Week
- >Profile
- (select Media, Mags)

Mergers

- >Infomat
- >Profile
- (select MCC, FTB, FT)

Metals And Mining

- >Infomat
- >Profile
- (select FTE, MCC)

Microcomputer Industry

- >Fintech
- >Infomat
- >Profile
- (select FTT)

Mobile Communications

- >Fintech
- >Infomat
- >Profile
- (select FTT)

Money Markets

- >Profile
- (select FTB)

News General

- >Profile
- (select UK News, Euro News, Int News)

New Products

- >Infomat
- >Kompass
- >Marketing Week
- >Profile
- (select MCC)

Nuclear Power

- >Profile
- (select FTE, MCC)

Oil

- >Petroleum Monitor
- >Profile
- (select FTE, MCC, FT)

Office Equipment

- >Fintech
- >Infomat
- >Profile
- (select FTT)

Pharmaceutical

- >Euromonitor
- >Profile
- (select MCC, NS, Int Biz)

Packaging Industry

- >Infomat

Paper/pulp Industry

- >Infomat

Parliamentary News

- >Profile
- (select UK News, KEE)

Personal Computer

- Industry
- >Fintech
- >Infomat
- >Profile
- (select FTT)

Petroleum Market

- >Petroleum Monitor
- >Profile
- (select FT, FTE, MCC)

Photographic Industry

- >Euromonitor

Political News/analysis

- >Profile
- (select UK News, Int News, Euro News, Politics)

Population Statistics

- >Profile
- (select FT)

Precious Metals

- >Infomat

Printing And Publications

- >Infomat

Public Relations

- >Profile
- (select Mags, PR Week, FTM)

Public Transport

- >Profile
- (select UK News, MCC)

Publishing Industry

- >Infomat
- >Profile
- (select MCC, Media, FTM)

Research And Development

- >Infomat

Retail Industry

- >Euromonitor
- >Infomat
- >Profile
- (select MCC)

Retail Price Index

- >Profile
- (select MCC, FTE)

Safety At Work

- >Justis

Security Industry

- >Infomat

Shareholders Company

- >ICC

Shipping

- >Infomat

Software Industry

- >Infomat
- >Profile

Sports Equipment And

- Clothing Market
- >Euromonitor

Sports News

- >Profile
- (select UK News, Int News)

Taxation

- >Justis

Telecommunications

- Industry
- >Fintech
- >Infomat
- >Profile
- (select FTT, MCC)

Teleshopping Market

- >Marketing Week
- >Profile
- (select FTT, FTM)

Television Market

- >Euromonitor
- >Profile
- (select FTM, MCC, UK News)

Tenders

- >Infomat
- >Profile
- (select TED)

Textiles

- >Profile
- (select MCC)

Tobacco Market

- >Euromonitor

Toys And Games Market

- >Euromonitor

Trade

- >Profile
- (select Int Biz, FTB, MCC)

Trade Regulations

- >Justis

Trade Unions

- >Profile

Transportation Industry

- >Dow Jones
- >Infomat
- >Profile
- (select MCC)

UK Consumer Markets

- >Euromonitor
- >Profile
- (select CMI, MDD, Mags)

Unlisted Securities Market

- >Icc
- >Profile
- (select MCC, FTB, FT)

US Consumer Markets

- >Euromonitor

US News

- >Profile
- (select AP, TWP)

US Regulatory News Agencies

- >Profile
- (select AP, TWP, DIZ)

USM

- >Icc
- >Profile
- (select FTB, MCC, FT)

Utilities

- >Profile
- (select FTE, MCC, Int Biz)

Video Equipment Market

- >Euromonitor
- >Profile
- (select FTM)

Waste Disposal Industry

- >Infomat

West German Consumer Markets

- >Euromonitor

White Goods Market

- >Euromonitor

World News

- >Profile
- (select Int News)

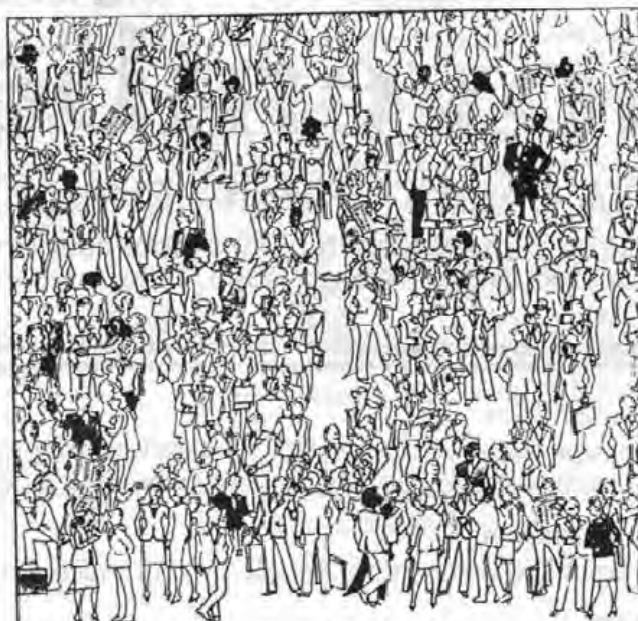
The Force



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Apple/Mac 89



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BAWA Centre - Filton - Bristol

The venue is the Sports facility of the local Bristol Aerospace and Rolls Royce factories, located in Southmead Road, Filton, two miles from the M32 Hambrook Junction.

Private facilities

User groups may book 'private' Syndicate/Lecture rooms for their AGM or use as informal meeting room - as may special interest groups - whose members may be dispersed nationwide.

Accommodation

Local hotel list available for people staying overnight.

Partners

Good local shopping and theatres are available. Bristol's historical waterfront is interesting and the lovely city of Bath is only 12 miles away.

Special Interest areas

At the 'Special Interest' areas, attendees may leave notes, making informal prespective timings for discussion groups not covered by main topics. These 'areas' consist of cosy 'alcoves' around the main exhibition area.

Business and Trade leaflet table

If you do not have a stand, but have a service to offer, this is where you leave your card/leaflet or details of your group.

Auction

An auction will be run by professional auctioneers. A catalogue will be available prior to the sale.

Prebooking admission tickets

Admission £3.00.

Stands costs on request between £20 and £50 depending on size and location within the hall.

All trade and other enquiries to: (0272) 693119 (evenings)
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For your Apple II and //e, //c, //gs

Format-80 is the only fully supported word processor for the Apple II and II+ (requires 64K RAM and 80 column card). Of course Format-80 also runs on the complete Apple // family.

As you would expect from Elite Software, Format-80 has all the features you would want from a professional word processor.

Includes mailing list database editor and merge facility, allowing a single letter to be personalised and a copy to be printed for each entry in the mailing list.

Also included is a mini-spreadsheet so that text and calculations may be mixed on the same page.

Scientific and Anglo-Arabic bilingual versions are available, and for MS-DOS computers there is Format-PC.

Format-80 is not copy protected.

Format-80 costs just £99 + VAT. Existing users can upgrade to the latest version (2.26) for £35 + VAT.

If you would like more information, please contact Elite Software or your local Apple dealer.

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Copy II Mac (backup protected software)	23.
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Epstart (run an Epson serial printer)	35.
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Quark Xpress 2.1 (the most powerful)	495.
Quark Style (mini Xpress with templates)	245.
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Smart Art (lettering manipulation DA)	call.

GRAPHICS

Canvas 2 (amazing power, colour paint & draw)	175.
Comic Strip Factory (create your own comics)	49.
Cricket Draw (PostScript Draw program)	195.
Clarix CAD (state of the art CAD)	540.
Desk Paint II (full paint/draw progs in a DA)	75.
Dreams (new generation CAD)	249.
Freehand (PostScript art and text)	365.
Illustrator 88 (auto trace, colour, blending...)	425.

Image Studio (grey scale image control)	425.
MacCalligraphy (stunning Japanese style painting)	175.
MacDraft (biggest selling drafting tool)	175.
MacDraw II (the classic draw program)	315.
MacroMind Director (state of art animation)	495.
Streamline (Adobe autotracer)	325.
Showcase FX (colour titling for TV/video etc)	225.
SuperGloss (save and transfer any file or image)	55.
Super 3D ver 2 (colour Mac II support)	325.
Studio 8 (new colour paint program)	255.
The Curator (best clip art database)	89.

PROGRAMMING

LaserTalk (PostScript language editor)	169.
LightSpeed C 3 (with source level debugger)	155.
LightSpeed Pascal (highly rated)	89.
Programmers Online Companion	35.
QuickBasic (Microsoft's version)	85.
Prototyper 2 (design interface auto-generate code)	155.
TMOR (superb debugging tool)	98.
True Basic (by the original author of Basic)	65.
ZBasic 5 (the latest Basic available)	125.
VIP 2.5 (programmable flow charts)	89.

PROTOTYPYER 2

allows quick and easy program code generation with all standard Mac controls like windows and menus including links to C or Pascal

£155.00

CLIP ART

Visual Arts 1 (quality PostScript clip art)	65.
Visual Arts 2 (business orientated images)	75.
Comic People (bit map comic characters)	35.
WallPaint (the best bit map art by miles)	each 49.
"Classic Clip Art", "Animal Kingdom", "Printers Helper", "Old Earth Almanac", "Industrial Revolution", "For Publishing", "Special Occasions", "Island Life", "People".	

BUSINESS

101 Macros Excel (diverse and useful macros)	49.
Cricket Graph (top graphing tool)	125.
Cricket Presents (presentation tool)	280.
FileGuard (secure important documents)	135.
MacMoney 3 UK (home, small business accounts)	75.
MacProject II (superior new version)	345.
Microsoft Excel (the power spreadsheet)	209.
Microsoft Works 2 (5 integrated programs)	159.
MicroPlanner Mac (Project manager)	399.
Persuasion (Aldus' new top end presentation)	365.
SmartForms Designer (Clarix' new forms package)	305.
PowerPoint (desk top presentation tool)	209.
Visual Business No. 5 (business graphics)	310.
Wall St. Investor (analysis and database. New vers.)	395.
Wingz (best spreadsheet available)	255.

DATABASES

C.A.T. (contacts, activities, time-sales aid)	245.
Database (new full featured DA database)	89.
Double Helix II (easiest major database)	365.

Filemaker II (versatile and powerful, superb)	199.
Filebase+ Mac (dBase III PC compatible)	319.
Filebase+ Multiuser (Network version)	495.
Omni Accounting (For all 5 modules)	395.
Omni 3 Plus (now the best value by far)	149.
Omni 3 Multi User (Network version)	425.
Omni 5 (fast & PC compatible)	450.
Panorama (spreadsheet like database)	225.
QuickDex (essential lightning fast DA database)	35.

HYPERCARD

DTP Advisor (tips and advice on layouts)	59.
Focal Point (can run your life & business)	69.
Focal Point II (will run your life & business)	125.
Icon Factory (2000 icons plus editor)	35.
HyperAnimator (sync sound and animation)	115.
HyperComposer (create sound & music scripts)	45.
HyperBible (King James version on a stack)	150.
HyperTutor (stack teaching stack)	39.
ReportIt (reports designer plus improved printing)	75.
Script Export (HyperTalk in a stack)	49.
Silver Screen (movie database, Oscars, actors etc)	49.
SuperCard (colour Hypercard & more)	135.

Fonts

Adobe Fonts (full range at discount prices)	call.
Blanca (new display face includes grey versions)	59.
Fancy Fonts (64 new versions of built in fonts)	59.
Fraction Fonts (in Helvetica & Times faces)	59.
Fantastic Plus 2 (bitmap font creator/editor)	59.
Fontographer (laser font creator/editor)	225.
Fluent Fonts (2 excellent discs of bitmap fonts)	36.
Fluent Laser Fonts (quality laser fonts)	59.
Keymaster (turns PostScript into fonts)	59.
Monotype Fonts (full range at discount prices)	call.
World Class Fonts (2 disc sets of good fonts)	each 49.
"The Originals", "The Stylish", "The Giants" and now "The Triples"	

PC COMPATIBILITY

AST 286 (AT Compatible board for Mac II)	975.
MacLink Plus (port PC-Mac with codes)	145.
MacLink Plus Translators (4 SE/30/fix range)	115.
Soft PC Mac OS (PC emulation in software)	275.
Top's Flashcard (LocalTalk Net card for PCs)	125.
Top's DOS (PC software for TOP's network)	125.

COMMUNICATIONS

DaynaTalk (rival LocalTalk accelerator)	145.
Liaison (access a desktop via modem)	169.
InterFax (fax & modem in one. Brilliant)	375.
Packet Stradcom Modem (V21,22)	145.
Red Ryder 10 (the pro's choice)	70.
Timbuktu (operate remote Macs)	75.
TOPS (low cost and efficient networking)	145.
TOPS Flashbox (Speed up LocalTalk 3 times)	125.
Vicom 3 (friendliest comms software)	155.
WS3000 Modem (V21,22,23)	265.

MUSIC

Concertware + (8 voice composer, player)	39.
Concertware + MIDI (new features)	99.
Jam Session (play like a professional)	39.
MacDrums (multiple drum synthesiser)	39.
Super Studio Session (now works on Mac II)	69.
HyperComposer (sound and music scripts)	45.



TRAINING

DTP Advisor (tips and advice on layouts)	59
PageMaker College (tutorial lessons)	160
Typing Tutor IV (excellent way to learn)	39
LearnWord 4	each 39
(4 modules for Microsoft Word)	all 4 for £140
Learn FileMaker II	each 39
(4 modules for FileMaker II)	all 4 for £140
HyperEasy	each 39
(4 modules for Hypercard)	all 4 for £140
Excelerate	each 29
(8 modules for Microsoft Excel)	all 8 for £200
PageTutor	each 39
(4 modules for PageMaker)	all 4 for £140
Learn 88	each 39
(4 modules for Illustrator 88)	all 4 for £140
MacTeach (specify Mac and II HD or floppy)	each 39
(2 modules Macintosh training)	

HARD DRIVES

miniQisk 20Mb	365
miniQisk 45Mb	450
miniQisk 70Mb	575
miniQisk 100Mb	695
Qisk 20Mb	425
Qisk 45Mb	475
Qisk 70Mb	595
Qisk 100Mb	710
Qisk 140Mb	825
Redline	call
CMS Tape Backup 60Mb Tape Streamer	695

HARDWARE

SIMMS (1Mb low profile 80 nanoseconds)	140
MacPlus Mouse (optical mouse, smooth)	60
SE & II Mouse (runner, never gets dirty)	75
MacRecorder (brilliant audio digitiser)	135
Mac II Stand (vertical floor stand with long cables)	69
Joystick MacPlus (something you've...)	45
Joystick Mac SE or II (always wanted)	59
Kurta Graphics Tablet (precise Draw/CAD input)	275
Z88 MacLink (port data from Z88 to Mac)	51
ToolKit (open your Plus or SE safely)	15
Irwin 68000 16Mhz (double Speed Mac SE)	275
Irwin 68020 16Mhz (a Mac II in a SE)	495
Irwin 68020 20Mhz (faster than a Mac II)	625
Irwin 68020 25Mhz (even faster still)	1100
Cables (ring us with your requirements)	call
Anet (AppleTalk set at half the price)	25

SCANNING

ScanMan (hand held 4" wide 32 halftones)	295
Thunderscan (amazing quality for low cost)	189
Thunderscan fits onto your ImageWriter I or II (not LQ) instead of the ribbon and an infra red eye reads the page as it passes through the printer. Comes with software ready to run. The scan quality, effectively 200 dpi, is superb - comparable to expensive flatbed scanners. Mac II adaptor now available.	
Read-It 2 (OCR software for most scanners)	285
Read-It Personal (for ScanMan & Thunderscan)	115

CHILDRENS

Kids Time (5 fun games for 3 to 7 year olds)	29
Mavis Beacon Teaches Typing	24
Mastering the GMAT (a must for MBA candidates)	45
The Manhole (suitable from ages 4 - 84)	35
Puppy Love (game for 3 to 5 years (Plus only))	19
Reader Rabbit (good reading trainer)	39
Talking Tiles (reading training with voice)	69
Where in the World is Carmen Sandiego? (10+)	29

Please note that we now have a new telephone number. It's not as easy to remember but it's a lot easier to get through.

EDUCATIONAL

Special very low Education prices are available on the following products to authorized educational establishments only with official purchase orders. If you are in doubt as to whether you qualify for discounts please call us before placing an order.

MICROSOFT
Excel, Word, Write, PowerPoint, File, QuickBASIC
CLARIS
SmartForms Designer, MacProject, MacDraw II, MacPaint II, FileMaker II, MacWrite II, CAD.

OTHERS
Illustrator 88, Image Studio, LetraStudio, ReadySetGo 4.5, Lightspeed C, Lightspeed Pascal, Nisus, Mathematica, More II, Omnis, SuperCard, Write Now.

Five and Ten pack versions also available on some products.

GAMES

Ancient Art of War (quality war simulation)	29
Ancient Art of War at Sea (salty war simulation)	29
→Arkadoid (addictive game of Breakout)	27
Balance of Power (Use strategy to keep peace)	24
→Balance of Power 1990 (Geopolitics, strategy)	24
Bridge (from novice to advanced player levels)	25
ChessMaster 2000 (best Chess game)	25
→Chuck Yeager Flight Trainer (colour)	25
→Crystal Quest 2 (Britain's favourite game)	35
→Crystal Quest with Critter Editor	55
→Colony ("Best game 1988" MacWorld)	27
Deja Vu (private detective adventure)	24

→Deja Vu II (Lost in Las Vegas)	24
Fire Brigade (the battle for Kiev 1943 - networks)	29
Flight Simulator (the famous Microsoft one)	39
→Falcon 2 (interactive dogfighting)	34
Ferrari Grand Prix (formula one simulation)	36
→Gauntlet (colour arcade game)	32
→Harrier Strike II (3D combat simulator)	32
Hacker II (crack the code, save the world)	25
Hitchhikers Guide to the Galaxy (Adams' classic)	15
→Hunt For Red October (sub simulation)	32
→Life and Death (Perform actual operations in detail)	24
Leather Goddesses of Phobos (raunchy advent)	15
MacGolf (superb graphics, highly realistic)	35
→MacGolf Colour (.. and highly addictive)	56
MacCourses (extra courses for MacGolf)	21
→Moochius (interactive adventure)	25
Patton vs Rommel (strategy war game)	19
Pinball (also includes construction kit)	15
→PS1 Mustang (fast & furious flying)	32
→PT 109 (patrol boat graphic simulation)	29
→QuarterStaff (role playing with colour)	29
→Road Racer (terrific high speed action)	45
→Reach For The Stars (galactic war game)	29
Scrabble (the old favourite)	29
Shanghai (Chinese Mah Jong)	15
→Shufflepuck (air table ice hockey)	25
Solitaire (9 different patience games)	24
→Solitaire Colour (beautiful graphics)	24
Sub Battle (command a WWII submarine)	34
→Sub Battle Colour (most realistic)	34
Tetris (award winning Soviet game)	24
→Tetris Colour (brain leasngly addictive)	27
→The Manhole (suitable from ages 4 - 84)	35
→Universal Military Simulator (3D wargame)	35
Where in the World is Carmen Sandiego? (10+)	29
Wizardry (graphic adventure)	29
→Zork 0 (classic adventure now in colour)	39

Books

Apple Macintosh Book	19
Inside Mac Vols 1, 2, 4, 5	each 23
Inside Mac Vol 3	19
Macintosh Advisor	16
Macintosh Bible 2nd Edition	26
Macintosh Font Book	20
Macintosh Revealed Vols 1 & 2	each 23
Hypercard Handbook	27
Hypercard Handbook upgrade	18
Guide to Omnis 3	21
Excel Advanced User Guide	17
Using Excel	19
Making Art on the Mac II	20
Mastering Excel	22
Excel: Using Macros	18
Mastering Adobe Illustrator 88	21
Using Aldus PageMaker 3.0	21
Design for DTP	12
Quark XPress Companion	12
Microsoft Word Made Easy	16
Word Perfect	20
Works on the Mac	17

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MacChat

Norah Arnold looks at the latest Macintosh developments and product news.

Optical Disk

The following press release has been received from Data Peripherals Ltd.

A rewriteable and easy-to-use optical disk subsystem for Apple Macintosh SE and Macintosh II users is now available from Stafford-based Data Peripherals Ltd. A Macintosh Plus version is due to follow shortly. With more than 600 MBytes of rewriteable memory available on a single disk, the Ricoh RS-9200E provides the fast data access and transfer rates necessary for DTP, CAD/CAM, graphics and image filing applications.

The RS-9200E features a built-in SCSI controller for direct plug-in to any Apple Macintosh machine. The subsystem measures a compact 8.5 x 12.5 x 6 inches, weighs less than 7 kg and allows either vertical or horizontal mounting.

The unit has an ISO-approved standard 5.25 rewriteable optical disk cartridge and a 256 Kbyte buffer memory. It is the first rewriteable system to provide full compatibility with write-once optical disks.

Data can be transferred at 1.2 MBytes per second and this high speed capability is complemented with functional auto loading, high speed self test, automatic recognition of media surface, automatic error control, error report and pre-fetch facilities.

The highly reliable magneto-optic media has a life of more than ten years both before and after recording. More than 10⁶ write/erase pass operations can be made to the disk.

Error rate at the SCSI interface is minimal at less than 10⁻¹² bits (after Error Correction), the unit has a Mean Time Between Failure

of 20,000 hours and a Mean Time To Repair within 30 minutes. The RS-9200E can be daisy-chain connected to other units and systems and comes complete with all the software and drivers for all Macintosh systems.

Further information about this unit can be obtained from Peter Brophy, Data Peripherals (UK) Ltd, Unit 4 Kenworthy Road, Astonfields Ind Est, Stafford ST16 3DY.

Colour it with Cricket

Principal Distribution is distributing the latest package to come from Cricket Software, Cricket ColorPaint for the Macintosh II.

The press release states that ColorPaint offers precise yet flexible painting tools and unique features which make it easy to create stunning, full colour artwork.

An exclusive FreshPaint feature adds object-oriented drawing with the precision of bitmap painting. Users simply select a tool, draw a simple shape and fine tune it as an object. When the FreshPaint object is 'de-selected', the shape becomes a bitmap, integrated seamlessly into the painting.

A powerful custom tool facility lets users make their own painting tools in a personalized Tool Palette.

Texture Tool provides control of colour, fill pattern, shape, size, width, overlay mode and move, allowing virtually unlimited textures such as grass, velvet or brushed steel.

In addition, ColorPaint offers a wide range of polygon handling tools such as:- Rotated Polygon to paint rotated multi-sided images; Spyro Polygon to generate intricately rotated polygons; Smooth Polygon for making shapes with

rounded corners, and Parallel Polygon for parallel lines and shapes.

ColorPaint has impressive colour handling capabilities including colour smearing and smoothing, with customisable brush shapes; colour blend animation for special visual effects; and overlay modes for special layered pattern and colour effects. Users may define palettes of up to 256 colours using any of the 16.7 million colours available on the Macintosh II.

ColorPaint, which retails at £225 ex VAT, requires a Macintosh II with additional floppy or hard disk and 2 Mb RAM.

ColorPaint and other Cricket products for the Macintosh are available from dealers and AppleCentres through Principal Distribution Ltd. More information is available from Gill McKee, P&P Micro Distributors Ltd, 0706 217744.

Arabic Computing

Some further information has been received from Ahmad Ubaydli, member No. 3416, with regard to the Two-day Seminar on Bilingual Computing in Arabic and English run by the Literary and Linguistic Computing Centre and the Centre for Middle Eastern Studies of the University of Cambridge. The seminar will be held on 6th and 7th September, 1989.

Some papers of interest to Macintosh users will be presented at the seminar. Dr. D. B. Parkinson of Brigham Young University, USA, will speak about 'Using Hypercard to teach Arabic.' Ahmad Ubaydli will talk about 'Arabizing the Mac' and Dr. K. S. Vikør of the University of Bergen, Norway, will present a paper on 'Arabic word processing on the Mac - some user experiences.'

Representatives of Apple Computer UK will be present and the Product Marketing Manager Africa, Mediterranean, Middle East of Apple Computer Europe, Hesham Abu El Ata will act as Convenor of Session 4 of the seminar.

Curve Fitting for the Macintosh

A press release has been received about MultiFit from Day Computing.

MultiFit allows you to analyse your data directly with the non-

linear model you require, rather than forcing you to transform your data and use linear regression, a process which introduces weighting errors.

Your model equation can contain up to eight variable and four constant parameters. Equations are built using normal arithmetic operators: + - * /; ^ (raise to a power); and parentheses. Built in functions are sine, cosine, tangent (all switchable between degree and radian operation), log, ln (natural log), absolute value, square, square root and exp (e^x). Up to two repeated sub-expressions can be defined separately and referenced in the main equation.

As well as curve fitting, the equation can be used as a transformation, allowing you to perform extrapolations and simulations.

Simple linear regression provides slope and intercept coefficients with standard errors, analysis of variance for the regression, and the Pearson product-moment correlation coefficient with associated probability.

Multiple linear regression, with up to nine independent variables, provides coefficients with their standard errors and probabilities, analysis of variance, and coefficient of multiple correlation with its associated probability.

Polynomial regression, up to ninth order, provides coefficients and residual sum of squares. All of these models generate fitted and residual values, essential for determining how well the model explains the data.

Median regression minimises absolute deviation rather than squared deviation to minimise the effect of outlier values which would seriously distort a least squares (simple linear regression) fit.

Up to 30 data columns can be in use simultaneously, displayed either in individual windows or in a single window ('spreadsheet' like). Data columns can contain up to a 1000 values each, with a continuous indication of the current position in the data set.

Decimal places displayed on screen can be adjusted between 0 and 9 but all calculations are carried out in extended precision to eliminate round-off error.

Data columns can be imported

from or exported to text files. They can also be sorted (ascending or descending), ranked, normalised (Z-scores), or combined by addition, subtraction, multiplication or division.

Defined equations can also be used to transform data. Mean, variance, standard deviation and standard error of mean can be calculated for any number of data columns, useful for treatment of replicate data.

Random pseudo-data can be generated from uniform (rectangular), normal (with defined mean and variance), Poisson and exponential distributions, and sequences of numbers can be generated, useful for simulation.

Area under curve can be estimated by the trapezoidal and log-trapezoidal methods. Scatter graphs can be plotted with up to ten on screen simultaneously for direct comparison.

Error bars (horizontal and vertical) can be added (representing fixed, percentage, standard deviation, standard error of mean or individual error). Axis scales can be linear or logarithmic (base ten or natural). Axis ranges and decimal places can be altered, and titles can be altered and repositioned. Theoretical lines from any fit can be superimposed. All these features can be altered with the graph still on screen - there is no need to recreate.

Graphs can be saved to MacPaint or PICT (MacDraw) files, or exported via the clipboard.

All data columns, fit results and graphs can be printed, and a Logbook window contains a record of all the fits carried out in the current session.

MultiFit requires a Macintosh running system 4.2 or later and is fully compatible with MultiFinder. The 60 page manual contains full details of how to use all the program features, including some theoretical background and examples illustrating each of the fitting procedures. The data files used in the examples are included on disk. MultiFit adheres fully to the classic Macintosh interface. The MultiFit manual contains full details of program operation, and examples of all the procedures available. MultiFit costs £80 or \$150 (US) including carriage. A discount is offered on multiple purchases. More information can

be obtained from Day Computing, P. O. Box 327, Milton, Cambridge, CB4 4WL.

DataFrame Hard Disk

The following letter has been received:-

I am writing to you to inform you of the availability of SuperMac DataFrame XP30 Hard Disk Drives at a greatly reduced price.

These 30 Mb drives provide high speed data storage and retrieval for owners of Macintosh Plus, SE, II or SCSI equipped 512K Macintosh and comes complete with utilities software and a three month replacement warranty. The DataFrame fully complies with Apple's SCSI standard.

Utilities which come as standard include DataFrame Manager, DiskFit, SuperLaserSpool, SuperSpool and Sentinel, a data encryption utility.

These drives are brand new and have been opened only to ensure that when they reach you they are set to UK voltage.

The price for all this is £400.00 including postage (no VAT payable). (The RRP for the DataFrame XP30 is £695 + VAT so our price is an incredible saving of £399.25)

Mac SCSI cables are available for £15.00 including p+p.

Orders may be placed by telephone or in writing. Payment accepted by cheque only, made payable to Simon Marsh. Goods are delivered by return by overnight carrier.

Please pass this on to Macintosh members of your group. If anyone needs further information please do not hesitate to contact me.

Simon Marsh
10 Imperial Crescent
Town Moor
Doncaster
South Yorkshire
DN2 5BU

Last Word Systems

The Last Word has opened a specialised computer systems house to serve publishing and the allied industries. The Last Word Systems Ltd., has been appointed an authorised Apple Dealer.

Based at the group's New Kings Road headquarters, The Last Word Systems Ltd. will design and supply systems for professional desktop publishing, desktop reprographics, presentations and designs.

System 7.0

Notes from Apple Computer Inc. on the development of System 7.0.

Feature Notes

Outlined below are the core features under development for inclusion in System 7.0. The Core System 7.0 features are those which we have committed to including when System 7.0 is shipped. In addition to the Core features, there are several other technologies that are under development. Apple will announce the complete System 7.0 feature set later this year.

Core System 7.0 Features

Virtual Memory

Virtual Memory allows users to extend available memory by treating their hard disk as a "virtual" extension to RAM. This will allow users to run more and larger applications under MultiFinder with less RAM than would otherwise be required.

For example, running a word processor, presentation package, spreadsheet, drawing program and HyperCard® might ordinarily require four megabytes, but this same set of applications could be run in two megabytes on a Macintosh with virtual memory.

To take advantage of Virtual Memory, customers must have a Macintosh computer with a *memory management unit*. Currently, this includes the Macintosh SE/30, IIfx, IIfx (the 68030 CPU has a built in memory management unit), and Macintosh II when equipped with the 68851 PMMU (currently available).

32-Bit Addressing

32-Bit Addressing allows Macintosh computers to extend their memory capacities beyond 8 megabytes to 128 Mb of physical RAM and up to 4 Gigabytes of virtual address space. This will be

particularly important to users of advanced graphics applications that use large color images, advanced sound applications, artificial intelligence programs and other software that is memory intensive.

The combination of Virtual Memory, 32-Bit Addressing, and MultiFinder™ will enable Macintosh computers to support the memory necessary for users to run more applications and larger applications.

InterApplication Communications Architecture (IAC)

IAC Architecture will support four types of application-to-application communication:

- 1) program-to-program communication - a low level tool used to send data between applications,
- 2) Live Copy/Paste - a mechanism which supports the dynamic linking of documents,
- 3) AppleEvent™ - a standard set of messages that applications can use to request actions of one another (e.g., "open document"), and
- 4) Clipboard Copy/Paste - supports the copy/cut/paste tools that are currently available.

Here are some examples of how these will benefit users:

•A user could "live paste" a chart into a word processing document and have the changes in the chart automatically passed on to the word processing document. This powerful feature allows the system to manage tedious updates for the user automatically.

•Groups of users sharing an AppleShare™ file server could cooperatively develop an a presentation. Each user would "live

paste" his individual work into the master document so that the master always represents the current collaborative work.

•A telecommunications program multitasking in the background could, using AppleEvents™, send data from a remote host computer to a foreground database program or charting program. This cooperation among applications allows users to get more out of the combination of applications than they could from the individual components.

•A user programming tool could allow users to create custom application command scripts that would automatically control other applications using AppleEvents™ as the communications vehicle.

Outline Fonts

Outline fonts are mathematical descriptions of type that can be scaled to any point size or resolution. This will provide sharp type on all Macintosh displays, printers, fax modems, etc without having to install specific size bitmaps into the system.

This means that Macintosh applications will be able to use any type size that the user wants (not just the few found in typical Font menus). In addition, Apple's outline fonts will be supported by all the major type manufacturers which means there will be thousands of type styles to choose from in the future.

Outline fonts will provide better WYSIWYG and will dramatically improve the quality and flexibility of non-PostScript® printers like the LaserWriter® IISC, ImageWriter® and the ImageWriter LQ.

Outline fonts will also make applications more flexible. For example, a typical drawing program allows users to arbitrarily scale the size of a drawing. Frequently though, imbedded type does not scale properly. With outline fonts, users will be able to scale text as easily as the graphics which will allow users to create better documents. Outline fonts will also allow applications to present more legible "print previews" and zoom-in or zoom-out functions.

New Print Architecture

The new print architecture is designed to make it much easier to support output devices like printers, fax modems, file recorders, plotters on the Macintosh. The result will be higher quality output and a wider range of output device choices.

In addition, the new print software will provide background printing for all types of printers, improved color and halftone printing, and will allow applications software to control printers in more sophisticated ways. This will allow applications to print letters interweaved with letters or landscape and portrait pages in the same document. The new print architecture will require that users have new print drivers, but will allow users with System 6.0 and 7.0 to transparently share LaserWriter printers.

Layout Manager

The Layout Manager will provide typographic quality text layout for all applications. The layout manager will allow any application to offer these advanced text positioning features including kerning, ligatures and contextual forms.

Database Access

With the new Database Access capabilities, users will be able to integrate data from remote host computer databases into their Macintosh applications. Apple's standard interface will allow applications developers to provide access to many different types of databases from many different vendors that may be running on many different types of computers. This will give users maximum flexibility to access the data that they need.

The design of the database access facility also will allow users to integrate host data using the "live" copy/paste capabilities also to be available with System 7.0. Once the appropriate links are created by the database administrator, users with no knowledge of how to access the remote database will be able to use its data using the most familiar of Macintosh techniques.

With Database Access, users will not be limited to stand-alone or local area network databases as found in other systems. Instead, Macintoshes will have

standard access to local area and enterprise-wide databases that are central in larger computing environments.

New Finder

The Finder is the most visible piece of Macintosh System Software. All Macintosh users interact with the Finder to copy files, launch applications and to manage system resources. The new Finder will provide users with more intuitive system management capabilities as well as additional power. The new Finder will also be extensible so that functions like electronic mail and disk backup can be integrated into the intuitive desktop metaphor.

Highlights of the New Finder

- **Integrated System Utilities** like FontDA Mover - Allows users to install fonts and desk accessories by dragging into the system folder.
- **Help** on any desktop icon or menu item.
- **Integrated Find** - Locates and retrieves any file from any folder and brings that file to the front-most window.
- **Aliases** - Allows the creation of multiple icons for a single file. This would allow documents to be filed in different folders. For example, a budget spreadsheet for project ABC might be simultaneously filed in a "budget" folder and a project ABC folder.
- **Stationery** - Provides for the creation of custom document templates, such as a memo template or a newsletter layout template.
- **Custom Views** - Allows users to configure desktop windows to show standard or custom file displays.
- **Configurable Apple Menu** - Allows users to install any application, document or desk accessory into the Apple menu. This allows users to get at documents and applications as easily as they can access desk accessories with today's Finder.
- **Extensible** - New capabilities can be added in the future such as mail and backup.

Additional Software Under Development

File System Enhancements

System 7.0 will provide several

new file system enhancements including a feature called the File System manager which developers will use to give users desktop access to alternative file systems like MS-DOS, OS/2, Unix®, Pro-Dos®, etc. By integrating these files into the desktop metaphor, users will be able to manipulate non-Macintosh files with the same intuitive techniques that they use on Macintosh files.

Other file system enhancements will allow applications to find and manage files faster and more flexibly.

New Sound Capabilities

System 7.0 will also provide capabilities that will make it easier for developers to use sound features. These new capabilities include a standard MIDI manager to provide a standard means to communicate with electronic musical instruments. In addition a new sound compression utility will reduce the amount of disk space for sound files. A sound sequence manager will help multimedia applications to synchronize sounds with other activities like animation.

Communications Toolbox (Available Q3 1989 for System 6.0.3)

The Communications toolbox raises the standard capability for applications to communicate with other computers by modem, local or wide area networks. The toolbox provides a standard way for developers to support communications hardware as well as file transfer and terminal emulation capabilities.

32-Bit QuickDraw™ (Ships separately in Q2, 1989 for use with System 6.0.3)


The new extended capabilities of QuickDraw will vastly enhance the color capabilities of the Macintosh. With 32-Bit color, users will no longer be limited to 16 or 256 colors, but with new high-performance graphics interface cards, users can see up to 16 million colors simultaneously. This capability, previously seen on only higher-end computers will provide users with photo-real image quality on their displays, color slide makers and projection devices.

International Utilities

It is important to have internationalized systems that can be customized to different languages and character sets. Already, the Macintosh is the most international of personal computers. The new utilities will make it even easier for Macintosh to support other languages as well as it does English.

One-Button Installer

The One-Button Installer will make it easier for users to install new Macintosh System Software on their machines. The new installer will provide for a one-button automatic installation for most users and a custom installation facility for more advanced users.

System 7.0 will provide a broad range of new capabilities. These capabilities will make users more productive and will enable the development of many new and innovative applications. 


FontSizer

FontSizer is a utility that allows you to build a screen font representation of any PostScript® Font in any style (plain, bold, italic, or bold italic) and at any size, from 12 to 127 pt.

Your Macintosh system comes with screen fonts that are built at certain sizes (usually 10, 12, 14, 18 and 24 pt) that match your LaserWriter fonts. When you use a larger size font (say, 72 point), the printer will image the font smoothly at the correct size, but the Mac will display a jagged, distorted character. This is because it builds the screen display by scaling up the largest available screen font. With FontSizer, you can build a screen font at the exact size you need, which eliminates distortion and spacing problems.

Screen fonts that you create are resolved at the true screen resolution providing clean crisp characters at point sizes up to 127 point.

Finally What You See is as good as What You Get!

FontSizer is a trademark of U.S. MicroLabs Inc. 

Z88-to-Mac

A review by David Durling

After many years of relative happiness with an Apple II, about a year ago I decided to buy a Mac SE with an LQ printer. The ease of use, the power of the software, and the sheer fun of using this system has been both a revelation and a source of joy in the ensuing months.

I had heard of the Z88 from Cambridge Computers but, like many people, did not regard anything from the Sinclair stable as either professional or worth buying. Some of us have long memories of innovative products which did not stand the test of time. However, the machine was reasonably priced at around £250, it was lightweight and about the size of an A4 writing pad, and it did come with all its basic software in ROM including quite a powerful word processor.

My peripatetic lifestyle means that I spend a lot of time travelling on trains. I had long thought about a portable computer to use mainly as a word processor, so that I could edit texts or write items which could later be loaded into my office computer for enhancing and printing. At one or two trade exhibitions I had gone as far as discussing the latest portable with a salesman, but was neither impressed with the price nor the size of the machine.


But then I read a short review of a thing called Z88-to-Mac. This is a communications programme which allows easy communications between the two machines...

The package comprises a ROM pack which inserts into one of the Z88's slots, a serial cable, and communications software running on the Mac. All that is necessary to exchange files is to set the Z88 terminal application running and from then on everything is handled from the Mac using the familiar format of windows, folders and the normal conventions for handling files, much of it using the mouse.

The Z88 memories are exposed as folders, and the Mac software takes care of all transfers in both directions. There are considerable differences between the Z88's resident word processor Pipedream and MacWrite, but effective conversions between these applications can be easily achieved. As the Z88 has no disk drives, it is possible to use the Mac as a storage device for data. In this case, no conversion is performed, a dumping of memory takes place. It is also possible to convert between Z88 BASIC and BBC BASIC.

Additionally, spreadsheet files in WOKS format can be transferred, and these can be read by many Mac spreadsheet packages including of course Lotus.

Having now got used to the Mac environment, which is a real pleasure to use, it would be silly to pretend that the Z88 is wonderful to use: it is not. Pipes has some annoying features and can be frustrating to use at times. It is necessary to keep things simple. However, so far I haven't lost any text, and as a straight text input device it works just fine. Any fancy reformatting and editing can easily be carried out on the Mac later.

Z88-to-Mac has been written by Human Computer Interface Ltd. of Cambridge and can be purchased either from them or from Cambridge Computer for about £60. They do seem to have identified an opportunity with Mac users and have put together a very workable package. With the likely cost of the forthcoming Mac portable rumoured to be in the \$6000 range, this may be the only alternative for non corporate users for quite a while. And it is a useful package: perhaps needless to say, this has been typed on my (new) Z88 on a train somewhere between Sheffield and London, corrected on a Mac, and then E-mailed via the Force. 

Studio/1

Notes from Electronic Arts about this paint and presentation package.

Requirements:

- Macintosh Plus, SE, SE/30, II, IIx, IIcx.
- For best performance, 2MB recommended.
- 1 Floppy drive and 1 hard drive.
- Hypercard 1.2.2 or later and Home Stack.
- 800K available for the Finder.
- Make sure the Mac has System 6.0.2 or later.
- If in MultiFinder, set HyperCard's memory requirement to 1400K.

The shipping version of Studio/1 consists of 3 disks: the Program Disk (includes Gallery, an animated slideshow), the Animation Disk and the Hypercard Demo Disk.

Studio/1's paint and text features include:

- Up to 300 dpi editing
- Postscript® quality text layer
- Direct Apple® Scanner support
- Dithered gradients
- Sophisticated resizing and distortion tools
- 3D perspective
- Editable Bezier curves
- Masking
- Editing at 8 magnification levels, including zoomed out mode

Studio/1's animation features include:

- Special animation effects for automatic transitions, fades and distortions
- AnimPainting-Automatic page flipping makes fluid animation as easy as moving the mouse
- "In-Betweening"-Specify a start and end point, and Studio/1 does the rest. Ideal for distortions, linear movements and 3D rotations
- Animated brushes for capturing and reproducing multi-cell animations
- Animation templates included-Or create your own!

Also:

- File I/O: PICT, MacPaint, TIFF, EPSF, PICS, and S1AN (Electronic Arts' compressed animation format)
- Add digitised sound effects, speech and music to create multimedia presentations
- Studio/1 works with most laser printers, scanners and slide makers

Studio/1 is available at £99.99. For further information, or to order direct, please contact:

ELECTRONIC ARTS LTD (DEPT. S1),
LANGLEY BUSINESS CENTRE,
11-49 STATION ROAD, LANGLEY,
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الهوامش بشكل تلقائي على الماكنتوش، لأول مرة!

Nossous: at last, multilingual automatic footnoting on the Mac!

The Arabic user (or multilingual user) may never have had the privilege of getting an Arabic word processor bundled with his Macintosh (though he has received MacWrite for some time like other English users). This opened the market from the start for other companies, which soon found the feasibility of supplying the market with word processors. However, the companies moved slower than expected, and three years after launching the Arabic Mac, the user is now left with only three Word processors and one DeskTop Publisher.

There is little to be said about two other Word processors: the American al-Katib and the Canadian ArabicScript. The present writer has little information about the first. The second seems to be

ill fated from the beginning. Lately, Mr Hesham Abu al-Ata (Production Manager of Apple Europe) and Mr Bisher Abaza (President of PATI, the Canadian manufacturer) took my love story with this never-popular program to the grave, both confirmed the discontinuation of the program. In fact, PATI seems to have discontinued its cooperation with Apple to become rather an IBM orientated company.

Nossous: A MacWrite role for an Arabized Apple

Arabic Apple does not seem to have succeeded in finding the Arabic counterpart: the software that will make the business, academics and the common user make the "historical choice". This move has been handicapped to a

great extent by Apple policies followed in Middle East which showed little interest in invading the various schools and universities. However, this article will be concerned mainly with the software side of the problem.

The French WinText made significant progress compared to Arabic-Script. Although it is difficult to find a dividing line between Apple's job and a developer's job in perfecting a software, it is no doubt that the final performance of the latest software shows quite a great deal of progress. This can be attributed to the various developments which Apple made on its AIS 'Arabic Interface System, now 6.03). Moreover, the various developers are making more efficient use of AIS. WinText started with Word in



Automatic footnoting on Nossous

mind.

Noussous, on the other hand, started with MacWrite. Now I had the opportunity to review the latest version: 1.3. The earliest version of Noussous does not seem to have attracted enough response. However, it was successful in attracting important consumers like Linotype, which included it in its packages for professional publishers in the Middle East.

Version 1.3 is a sophisticated version. To start with it has all the common features of a good multilingual word processor. Scripts of languages using Roman scripts (English, French etc.) can be easily inserted within texts written in Arabic script (Arabic, Persian, Urdu etc.). Texts (multilingual or monolingual) can be entered and displayed in fonts and style on the same line. The ordinary MacWrite alignment, line spacing, tabs, paragraph indentation features are all available too.

Noussous has the header and footer facility. Unfortunately, for some reason the dates can be defined only in European version of Arabic numerals. Although, using "English" scripts is widely accepted now in the Arab World for writing numerals in (taken as a kind of using Arabic figures), the point still remains that the user would like to have both options open to him.

Automatic Footnotes:

Noussous can pride itself for being the first multilingual word processor to have automatic footnotes. All the previous Arabic software on the Mac, ignored this important feature. This feature would be the first one any academic would look for. Now it is available on this version, though not without problems. It seems that the facility was a Word feature, incorporated in Noussous environment. Consequently, no serious Arabization took place here. You still get your footnote, running from left to right. The poor footnote numbers (which appear in Arabic in the main text and in English in the footnote!), keep closely attached to the footnote text, so that even if you make the necessary alignment, they keep appearing at the left of the text. One gets the feeling that a real breakthrough had been made here, but it still needs refinement

to come.

The software also has the merge facility, which will enhance its opportunity to succeed as a tool for business in the Middle East. This feature is sometimes referred to as mail merge.

The basic concept behind this facility is fairly simple. Your main document contains the letter you want to send to many people, with special place holders (fields) for the parts that change from letter to letter (like the recipient's name and address). Using this way of printing will enable you to use the main text to send to various recipients and the basic concept behind this facility is fairly simple. Your main document contains the letter you want to send to many people, with special place holders (fields) for the parts that change from letter to letter (like the recipient's name and address). Using this way of printing will enable you to use the main text to send to various recipients in a very time-saving way.

Copying texts from other applications seem to have some drawbacks. An experiment was undertaken to see if it would be possible to retrieve a previous text with an end-of-chapter notes, update it and reformat it using the new automatic footnotes in Noussous. I tried unsuccessfully to get a text only document from an al-Nashir alMaktabi application. Although the transfer was successful, some problems arose connected to reformatting the text and updating it. Using the footnotes facility particularly was very difficult.

Moreover, the footnotes numbers are expected to be superscript and in small style. Although the first feature appears when implementing the footnote command, it was not clear how one can change the font style. Any attempt to change it while it was on text itself, would lead to losing the numerical sequence of the footnotes' numbers, and disrupt the whole system of automatic footnoting.

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The SiCONE Si3033 accelerator for the Macintosh II and Ix.

Press Release

Performance The Si3033 provides more speed to run CAD/CAM programs, faster graphics for desktop publishing and faster compiling capability for software development. With the Si3033, you'll see an overall speed improvement of over 200%.

Si3033 Specifications


Si3033 Accelerator is a modular two card design, an accelerator card and a card specific to the Macintosh II or Ix. There are two versions of this accelerator. Macintosh II version ships with a IIcard that fits into 68020 and PMMU sockets on the motherboard, and the Macintosh Ix version ships with a IIXcard that fits into the existing 68030 socket.

Processor: Motorola 68030 CISC microprocessor with a 33MHz clock speed (more than twice the speed of the Macintosh II) with on-chip PMMU and high performance 256 byte instruction and 256 byte data caches, surrounded with custom low power logic support circuits.

Cache: A unique feature of the Si3033 is its high performance 64K byte instruction and data cache. This cache supports burst mode accesses by the CPU, which significantly enhances overall system performance, especially for graphics and spreadsheet applications.

Optional Features: The Si3033 allows you to add Motorola's Enhanced 33MHz 68882 floating point math coprocessor. This coprocessor works with all applications offering 68881/68882 support. It is twice as fast as the 68881 that comes standard with Macintosh II and Macintosh Ix computers.

Compatibility The Si3033 is fully compatible with your existing Mac II or IIX software and hardware, and does not use a nubus slot, giving plenty of room for additional expansion boards. A high resolution colour monitor runs faster with the Si3033. The Si3033 uses all existing RAM in the Mac II; with no special speed requirements for the RAM.

Operations modes Since the original CPU is unplugged from its socket on the motherboard and mounted on to the accelerator board, it is possible to run the Macintosh in either accelerated mode (68030 running at 33MHz clock speed) or non-accelerated mode (68020 in Mac II or 68030 in Mac Ix running at 16MHz clock speed). 

ExpressWrite

Geoff Wood reviews this unique Desk Accessory WordProcessor

ExpressWrite by Exodus Software is not a fully fledged word processor. Indeed, it is advertised as a letter writing desk accessory. It offers the easiest mail merge system I've seen on any word processor. It has some other good features but it uses 112k of space in the System File. This seems to me to be contradictory.

If you use 800k discs, it's better to have a small System File and leave as much room as possible on the disc for the application program and other files. If you use a hard disc, you can have a big System File but you don't need a desk accessory word processor. You can use MultiFinder and open MacWrite or Word while another program is open.

However, ExpressWrite starts up much faster than a conventional word processing program. It offers simple word processing, mail merge and an easy way of printing envelopes. It can store standard paragraphs and insert them into an open file. It also offers stationery files (described below).

Don't expect to find features like spell checking, thesaurus, multiple columns, outlining, hyphenation, page numbers, headers and footers, footnotes, indexing, table of contents, dotted underline, subscript, superscript and other fancy formats. It doesn't even offer centred, right align or justified text, nor double line spacing. It's fine for writing letters but not for much more.

ExpressWrite will not run on a 128k or 512k Macintosh because of memory limitations. It needs System 4.1 or higher.

When you choose ExpressWrite from the Apple Menu, a Document window opens and the word ExpressWrite is added to the main

menu of the current program. From this ExpressWrite menu you can open an ExpressWrite (or MacWrite) document, save a file, store or insert a paragraph, merge files, print a document or an envelope or labels, specify the page setup and set certain preferences.

You can only have one Document file open at a time but if you use mail merge you can also have a Merge file open.

The Document window has vertical and horizontal scroll bars. It also has the usual close box, size box and zoom box. One disconcerting feature is that when you click in the close box, there is no option to cancel. You can only save, save as, or quit. The Document window cannot be re-sized to less than 6 inches wide.

The Document window displays a Ruler marked in inches and eighths but no numbers. The Ruler cannot be suppressed. Double clicking on the Ruler brings up a dialogue box in which you can set the page margins - left, right, top and bottom. (The page size is determined by choosing the Document Setup command in the ExpressWrite menu. This brings up the standard Macintosh dialogue box for your printer.)

You can set a tab in the Ruler by dragging a tab icon from a tab well at the side of the Ruler. You can have up to 16 tabs but only one type of tab, namely, left align. There is no first line indent marker but you can indent a first line by using a tab.

The Ruler applies to the whole

document. You can't change margins or have different tab settings in one document.

Above the Ruler there is a Status Bar with various icons that serve either as headers for pull down menus or as buttons for dialogue boxes. There is a Font menu, a Size menu, a Style menu, a Find menu, a Merge menu and a Stationery menu. There are dialogue boxes for Page Setup, Printing, Standard Paragraphs and Envelopes.

The Status Bar displays a box with the name of the document (the Title Bar of the window always displays ExpressWrite). There is also a Help button that brings up a picture of the Ruler and Status Bar and tells you what each icon does.

ExpressWrite features word wrap but it does not display page breaks automatically. You can display the page breaks (as = signs in the left hand margin) by clicking on a box at the left hand end of the Ruler or by using Command-=. When you enter more text, the = signs disappear.

A box in the lower left corner displays a figure 1 if the document will fit on one page. It displays 1+ if the document takes more than a page. This feature is handy if you are trying to restrict a letter to one page.

The Style menu offers Plain, Bold, Italic, Underline, Outline and Shadow. It also offers Condense and Extend to adjust the spacing between the characters.

You can select text by clicking and/or dragging. Clicking twice with the insertion point located anywhere in a word selects the word but not the space before or after it. If you then drag the mouse, it selects a word at a time instead of a character at a time.

If you click on a word to select it, then cut it, you will leave a surplus space behind. If you paste the cut word, you may have to insert a



space before or after. To select a word and its preceding and/or following space you must drag or shift click. You can use the arrow keys to move the insertion point but not to select text.

There is no command to display symbols for the space, tab and return characters. There is no visible indication of the end of the document; you must test with the down arrow key.

There is no command to change the line spacing. If you want double line spacing, you must press the return key at the end of each line. This could cause problems if you change the text.

Document files can be saved in three different formats, namely, ExpressWrite, Styled Text and ASCII Text. The first saves styles and tabs, the second saves styles but not tabs, the third saves text only, without styles or tabs. You can opt for automatic saving (see Preferences below).

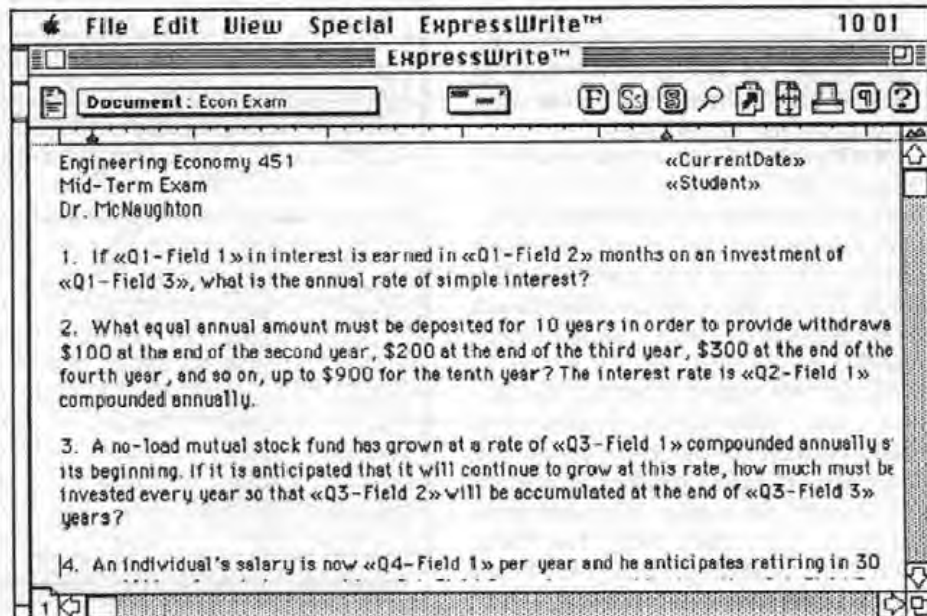
A selected paragraph can be saved as a Standard Paragraph in a folder usually called ExpressWrite Paragraphs. Any Standard Paragraph can be loaded into the Document window at the insertion point. This is a very useful feature for writing standard letters.

Any file can be saved as a Stationery File, usually in the folder called ExpressWrite Documents which also holds ordinary Document files. When you open a Stationery File, a copy of it appears as an untitled document. You can then edit it and save it under an appropriate name as a Document file or as another Stationery File. The original Stationery File is retained intact in its folder.

When you click on the Stationery icon in the Status Bar, the menu offers a list of the Stationery Files in the current folder. It also lets you open a document from a different folder or disc, or save the current Document window as a Stationery File.

The Find command offers four choices, namely, Find/Replace, Find Next, Find Selection and Replace Next. When you select Find/Replace, the Find & Replace dialogue box appears with a 'Find What' box and a 'Replace With' box in which you can type text. There are buttons to Find, Cancel, Replace All and Replace Next.

There is a checkbox for Wrap



Around. This means that if the search starts part way through the document, when it gets to the end of the document, it continues from the beginning. There is another checkbox for Italicise Changes. This means that the contents of the Replace With box will appear in Italic format.

The Find operation works forwards only and it is not case sensitive. It cannot be limited to whole words except by typing a space before and after the word in the Find What box. In that case, it will not find the word at the end of a sentence nor at the start of a paragraph. These limitations of the Find operation may not matter with letters.

If you use ExpressWrite to write a letter, one of its good features is the ease of printing the envelope. You simply select the address already typed on the letter, choose Copy from the Edit menu (or Command-C), then click on the destination address icon on the envelope icon in the Status Bar.

This brings up the Destination Address dialogue box into which you can paste the address using Command-V or from the Edit menu. This dialogue box also has pop-up menus to change the font, size and style.

You can also copy your own address from the letter (or from a standard paragraph file), then click on the return address icon in the top left hand corner of the envelope icon in the Status Bar. This brings up the Return Address dialogue box, similar to that for the Destination Address.

Alternatively you can call up these dialogue boxes by selecting Destination Address or Return Address from the ExpressWrite menu or by using keyboard shortcuts.

Having set up the envelope, you can choose Print Envelope from the ExpressWrite menu (or Command-E). This brings up the Print dialogue box for the printer already set with Chooser. However, the dialogue box has extra options to specify the size of envelope, the position of the destination and return addresses and a checkbox to print the return address.

You can preview the envelope before printing it but you can't preview a document before printing it.

Mail merge is the best feature of ExpressWrite because it is so easy to use. When you click on the Merge icon in the Status Bar (or choose Merge File from the ExpressWrite menu) it opens a blank Merge window behind the Document window. It also displays a list of any existing Merge files in the Merge Data folder or another folder specified in Preferences (see below). You can open an existing Merge file or start a new one.

The Merge window displays a matrix of cells in columns and rows, like a spreadsheet. Each column is a field, each row is a record.

The Merge window has vertical and horizontal scroll bars and it has various buttons in a panel down the right hand side. The panel also displays the number of records in the file. There is also a

icon which, when clicked, displays an information box showing the name of the file, its size in bytes, the number of fields and the number of records.

An empty Merge window shows four rows of cells. The top two rows of the matrix are reserved for field titles. When you double click in any cell in the second row, the Edit Title dialogue box appears inviting you to enter the title of the field.

When you click on the OK button, the field name appears in bold format in the top row of the column. It also appears in italics in the second row. The manual does not explain why the field titles are displayed in two rows instead of just one.

There is a button in this dialogue box to move to the next field so that you can enter all the field titles without having to double click on each cell in turn.

When you double click on the third row in the matrix, the Edit Default Value dialogue box appears, allowing you to enter a default value for that field. So, if several addressees live in the same city, you do not have to type the name of the city into that field in those records. But if you type an entry into a field with a default value, that entry overrides the default value.

The fourth row in the matrix is for the first record. To enter data into a record, you just double click on any cell to display the Edit Contents dialogue box in which you can type the entry. As with the field title dialogue box, there is a button to move to the next field. You can edit the data in any cell by double clicking on that cell and editing the contents of the dialogue box.

You can't change the width of the columns (each column displays about 11 characters) but you can enter up to 38 characters on one line in a field. You can type more than one line of characters in a field (up to 254 characters) but I can't see much use for this facility. You can use the arrow keys to move from one cell to another.

If you enter data into a field that has no title, ExpressWrite gives that column a title of field*n* where *n* is the number of the column. You can change the field title if you wish.

Student	Q1-Field 1	Q1-Field 2	Q1-Field 3	Q2-Field 1	#
Student	Q1-Field 1	Q1-Field 2	Q1-Field 3	Q2-Field 1	
Smith	\$250	four	\$14,000	7%	
Rodney	\$250	three	\$15,000	8%	
Jones	\$300	two	\$17,000	9%	
Nebbet	\$300	three	\$15,000	8%	
Whitley	\$325	four	\$18,000	7%	
Abbott	\$325	two	\$13,000	7%	
Garvey	\$225	three	\$16,000	8%	
Dench	\$225	four	\$15,000	9%	
Schmidt	\$200	two	\$14,000	9%	
Johnson	\$200	three	\$15,000	8%	
Newsome	\$275	four	\$12,000	7%	
Powell	\$275	two	\$19,000	8%	

To add a new record, you just click on the Add Record button in the Merge window. New records can be entered between existing records or at the start or end of the file. There is no provision to sort records into numeric or alphabetical order.

To delete a record, you select any cell in the row, then click on the Delete Rec button. You can select several records by holding down the Command key before clicking on each record. You can then hold down the Option key and click on the Delete Rec button to delete all the selected records.

Having created a Merge file, you can save it in the default folder or another folder.

A Merge file can have up to 250 records with up to 64 columns and up to 254 characters in each cell. The maximum size of a Merge file is 32k.

A Merge file is not limited to names and addresses. One of the examples supplied with ExpressWrite shows how to insert variables into questions for an examination.

To merge the data into a document, you bring the Document window to the top (Command-W) and enter the field names in appropriate places. This operation is very easy. You simply locate the insertion point where you want to enter a field name, then click on the Merge icon in the Status Bar. The drop-down menu shows a list of the field names of the current Merge file. You just drag to select the field name that you want to enter at the insertion point.

The first field name in the drop-down menu is always 'Current Date'. Other field names are listed in the same order as the entries in the consecutive columns. There is also a keyboard command (Command-Y) to insert the current date in the format May 24, 1989. There's no option to change the date format.

You can enter two or more field names on a line but you should insert space characters between them if necessary. You can also insert commas and other characters.

If you use the same field names in different Merge files, or if you use a file with different documents, you can save time by setting up and saving a standard paragraph of the field names (with spaces and commas). You can then use the Insert Paragraph command to insert the whole block of field names in the right place in the document.

Alternatively, you can type the field names into the Document window. If so, you must make sure that the spelling is correct and that the • and • symbols are inserted at the start and end of each field name. (Some fonts do not display the • and • symbols.)

To test the merge operation before printing, you can select Show Merged Document from the drop-down menu. Each field title in the document is replaced by the contents of the first record. This merged document can be saved or printed but not edited.

To see the next record merged into the document, you should

select Show Next Merge Rec from the drop-down menu. When you are satisfied that the merge operation is working as you intended, you can select Restore Field Names from the drop-down menu. This is a prerequisite if you wish to edit the document or the Merge file.

When you are ready to print, you should choose Print Document from the ExpressWrite menu. This will bring up the normal Print dialogue box for your printer but the panel will also show the name of the Merge file and three radio buttons labelled Merge, Selected Records and No Merge.

ExpressWrite cannot do conditional mail merge (like Word 3 and other programs) but you can select records by holding down the



Command key before clicking on the records you wish to merge.

Having printed the letters, you could print the addresses on envelopes by copying the name and address fields from the letter on to an envelope as the Destination Address. You should then select Print Envelope from the ExpressWrite menu and click on the appropriate buttons.

ExpressWrite does not leave a blank line in the middle of an address if there is a record with no entry in the field(s) on that line. This is true if the address is on an envelope or label but not in a letter. This is a serious shortcoming in a program for form letters.

To print labels, you must enter the field names as a Destination Address (as for envelopes), then choose Print Label from the ExpressWrite menu. The normal Print dialogue box has extra boxes and buttons to specify the size of the labels, the number of labels per row, the gaps between labels and the margin to the first label. There is also a Print Test button to print a test page.

Labels are normally printed from a Merge file but can be printed one at a time.

The Preferences command displays the Preferences dialogue box with various options. You can enter pathnames for Documents, Standard Paragraphs and Merge Data folders.

There are three radio buttons to set the Startup to open either a new document, an existing document or a merge file. If you start up ExpressWrite with either of the latter two options, it displays a list of the files held in the folders specified in the pathname option. You can then select the file you want to open.

There are four radio buttons to set ExpressWrite to save the file every 500 keystrokes or every 1000 or 2000 or to set Autosave Off. There is a checkbox to opt for the display of a dialogue box (when the specified number of keystrokes is reached) asking if you want to save the file. If this box is not checked, the file is saved automatically when the number of keystrokes is reached.

The Preferences dialogue box also has an option to set the default font and size. The Preferences file is saved in the System Folder.

The 100 page manual is printed in Bookman font on a LaserWriter. It is well illustrated and includes a good tutorial section which makes use of various sample files on the ExpressWrite disc. There is

also a quick reference card showing the Document window, the Merge Data window and the keyboard shortcuts.

You can cut text from another word processor and paste it into an ExpressWrite document but you can't paste graphics. You can also import text files and styled text files created by other word processors. A MacWrite file opened in ExpressWrite retains its font, size and style settings but not tabs or graphics.

Text files created by spreadsheet or database programs can be imported into a Merge file, provided that they use tab characters to separate the fields and return characters to separate the records. If the file is larger than 32k, a dialogue box notifies you of the size of the file and allows you to load data starting at any record number.

Some programs allow you to export the field names; if so, they will be imported by ExpressWrite. Many spreadsheet and database programs create tab delimited data. If so, the data can be cut and pasted into ExpressWrite.

You can use spell checkers and/or thesauruses with ExpressWrite but with some spell checkers you may have to export the ExpressWrite Document file as a text file.

To sum up, ExpressWrite is a useful program if you need to be able to write letters or do mail merge operations while using another program. For myself, I would prefer to put the money towards buying a normal word processor with more features. 🍏

info

Product : ExpressWrite
 Publisher : Exodus Software
 Available from :
 Exodus Software
 8620 Winton Rd., Ste. 304
 Cincinnati
 OH 45231, USA
 Price : \$99.95

Value : 🍏🍏🍏
 Performance : 🍏🍏🍏
 Documentation : 🍏🍏🍏

Harrier Strike,

Mission II



Ceri Fisher reviews this new software for would-be pilots

"They came out of the sun, I think they were Mirage-III's, but they flashed by so fast, cannon spitting and whistling into my own plane that I couldn't be sure. I yanked the stick down and the horizon flicked over as we pushed through a hard turn, my eyes losing their focus for a moment as the G forces built up.

Radar Locked blinked on the HUD and an alarm brought my mind back quickly. I let the leader have a sidewinder and his plane flew apart into shining wreckage which flashed past on each side of me. My cannon caught his wingman in boresight mode and I had to turn again to avoid more debris.

Losing Fuel buzzed the HUD and then Air Missile Alert. I released a decoy flare and saw the explosion as the incoming missile turned onto it, but I was losing altitude fast now, watching the sea spinning up towards me for my own carrier. I caught sight of another pair of goons coming up from one of theirs... I figured I had about another 40 seconds in the air..."

If this gives the impression of HSM II as a very exciting, reasonably authentic simulation/game — fine. It certainly is, and represents great value for money in terms of accuracy and performance.

The package comes well-presented with an excellent manual which runs to 56 pages and a quick reference card. The manual is full of the real information you need to get the most out of the game: flying techniques, manoeuvres for risky situations, how to survive each different mission, how to get the best out of the game, how to progress, and a bibliography. It all shows that much work went into this product

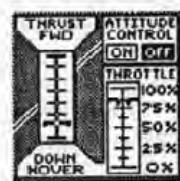
at all stages of its development.

It doesn't cope well with Multifinder — it runs up but forgets about its own screen so your mouse-clicks 'drop through' and are caught by appliances waiting underneath (unless you carefully clear them all away), and there's no sound. Best to restart your machine with Multifinder off (and SuperClock, and Mòiré if you have it, as pushing up to the right corner blacks out the screen at the worst possible time!).

After an animated title screen, with jets swimming like sharks around a 'letters of stone' title, the action starts with a few screens to set up the options:

- which of 5 scenarios (or missions — Falklands, Libya (this is a game for all Good Patriots!), etc. — and a non-combatative one with buildings to fly round and a bridge to shoot under);
- what level of play, and some 'control options' as to how tame or how realistic you want the response of the plane to be;
- how loud, how fast the enemies fly, and whether you want to be realistically limited in fuel and weapons load or not;
- practice mode or serious — in practice mode you can wipe out the plane but all that happens is a message saying so — so you pull back the stick and fly on!;
- how much of the graphics should be fully shaded — everything, objects-only, or nothing. The difference seems, subjectively, to be between 2-3 frames/second for everything shaded to about 10 frames/second for nothing shaded. In other words, realism in performance trades off for 'realism' in the graphics.

Then the noise of the engine starts and you find yourself either on your aircraft carrier flight deck (serious mode) or hovering somewhere slightly closer to the action (practice mode). Take-off, if you have to do it, couldn't be easier:



locate the **Thrust** <-> **Hover** indicator (left-hand corner, controlled with the '<' and '>' keys from the keyboard), and the **throttle** indicator next to it, ('[' and ']' keys) and crank them both up to full (i.e., lean on the '>' and ']' keys!).

The display icons change accordingly. The **Attitude Control** is peculiar to the Harrier and acts in two ways. In **hover**, which needs at least 55% thrust, it switches in automatically to hold you in a completely flat and stable attitude so you can turn without banking. This is great for swinging around looking for targets, lining up on inactive ground targets or coming in to land. In **non-hover** flight, you can activate it to level you out automatically, which is brilliant for coming out of a fast banked turn or a roll (for those of us who forget which way is up!).

And of course, there's 'viffing' (Vectoring In Forward Flight) — cutting the **Thrust** <-> **Hover** control right back to Hover — provided you're not upside down or on low throttle. This allows you to suddenly stand still so that the bandit who's lining your tail up in his gunsight will either hit you (careful, these guys have no fear!), or overshoot you — giving you a perfect target (theoretically!).

All the controls are on the keyboard, apart from the key use of the mouse as a joystick and to fire the cannon — which fires as long as you hold it down (with the tracer streaming away to an apparent convergence very realistically). The amount of "stick" movement is indicated by the **Control Stick** indicator — here shown in a medium-fast climb to the left.

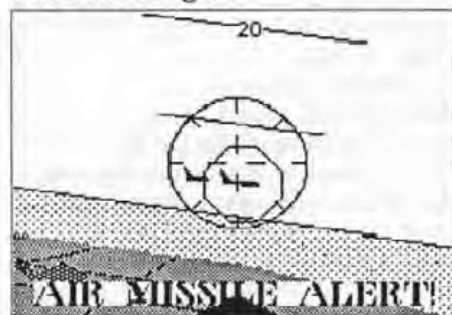
The rest of the instrument panel is easy to read: here's the artificial horizon for the same manoeuvre, showing the ground dropping away at a slight angle (it can be toggled off



for additional graphics speed, but that's like going faster at the expense of being blindfolded!).

Fuel, (air) speed, altitude and compass are all just what you'd expect, so that just leaves the armament indicators:

SIDEWINDERS Shows you how many Sidewinders/Camera-guided missiles you have left. Sidewinders (fire with the 'S' key) are heat-seeking on enemy plane exhaust (it's so neat, they have them too...) so you can always bring one down with these, even if you can't see the plane! If you can see the plane, the optional **Radar Locked** feature shows you which plane is being lined up for the Sidewinder. This helped me to make out the planes when they were a way off. In this little view, the 'Locked' plane is the one inside the octagon.



It also shows you the some of other Head-Up Display (HUD) features, many of which can be switched on and off during the game, from the keyboard:

- the **Air Missile Alert** which, like most messages is accompanied by a buzzer to make sure you noticed;
- the **gun-sight** (fixed in this case);
- the **Attitude Indicator** which shows your angle of pitch (dive or climb).

Camera-guided missiles (fire with the 'C' key) allow you to fly the missile right in to the target by means of video sent back to the Harrier, a small window appears in the middle of the screen, so you can see the ground come zooming up!



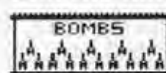
(That's an enemy airstrip in the middle with our carrier out at sea).



In the "Surrounded at sea" scenario, you have torpedoes instead — 'triflic, except that they sometimes go faster through the water than you do through the air!



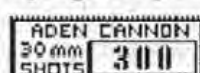
Flares are used as decoys to fool the enemy's heat-seeking missiles — ground (SAM) and air (AAM). Not much use very close to the ground, as the flare hits the ground before the missile hits the flare...



In "Surrounded at sea", you have bombs instead, and there is a 'bomb' view (I think they mean bomb-door view) which is rather confusing but useful eventually.



Available in all scenarios — very realistic as they swish away from beneath the wings and arc slightly down over about 20 seconds — they're not guided, but good for forcing enemy planes to avoid them by flying into your gunsight!



The business end: there is a fixed ('boresight mode') and a moving ('off-boresight') gunsight option — the latter is very confusing as the cross-hair zooms all over the screen. It's very effective within its range and almost instantly, too.

Although you can only have one Sidewinder in flight at once (and you only need one flare at once) there seems to be no limit to the number of Matras, torpedoes, or bombs, that can be in the air at any time — the game seems to slow up slightly if the number of moving objects is very large, but it's not a problem.

Given enough Sidewinders, you can't really lose as the enemy doesn't have flares, and all they can do is fly harder and faster (they do seem to be faster than the Harrier, and they can certainly fly harder than me!). This seems a bit unrealistic and could be improved by Sidewinder failure (as happens in real life, it's an overrated device).

Features I didn't get too involved with were:

- The **Star Wars** scenario: "...Although this scenario is unlikely to occur anytime soon in our solar system, we included

it to train the next generation of fighter pilots..." [HSM II Manual]

Oh, really? "Cadet Daniel!! Report to the simulator!!"

- **Spot Plane** views: There are many fixed and moving spot-plane views of the Harrier, but they all show it flying level no matter what it's actually doing. Besides, there's too much going on to think, "Well — how do I look??". The one exception is top view which is zoomable and essential for landing on the carrier, though maybe the bomb-view would be just as good. Also, there is the "Intelligence Map" option, which is a fixed, very high view down.

I'm sure that this is as good a flight simulator/game as any available for a small-screen Mac — so the only problem is... I want a go in the real thing!

Given the limitations of the small mono screen which we all love so much, maybe the future for this kind of game is to concentrate less on realistic graphic images and more on authentic treatment of modern aircraft combat where the close-in visual dog-fight has largely given way to beyond visual range (BVR) tactics. It could be just as exciting with more advanced radar and weapons, raid assessment and target prioritisation systems which could be (more) easily represented and would look terrific.

Also, there's a bit of Rambo-ism in this game, as in all fighting games — given that fighter planes operate as part of a team, it would be an improvement if a simulated co-flyer (or small formation) were part of the advanced flying features. In any case, modern fighters are very much more involved in bluff and what might be called diplomacy (at the highest level!), so perhaps some scenarios should be lost if you have to use your weapons.

By the way: I played this on a standard MacPlus and a standard SE 2/20 — it will run on a larger screen if **Use Quickdraw** option is checked to start with. It's not copy-protected, so "Just Say 'No'" to unauthorised copies please.

Thanks to MacLine for supplying the loan copy for evaluation. (See page 41 for prices).

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The Future for Macintosh Development

An Introduction to Object-Oriented Programming by Randy Leonard

Object-oriented programming languages date back to the late 1960's with the development of the language Simula-67 by Kristen Nygaard and Ole-Johan Dahl of the Norwegian Computing Center. More recent object-oriented languages include SmallTalk-80, C++ and Object Pascal. However, until only recently these languages have received little or no consideration as suitable languages for application development on widely used and popular computers. This trend, however, is quickly changing. Recently, NeXT, Inc. announced its workstation computer whose only development environment is based upon the language Objective C and its object-oriented programming tool called NeXT Step. IBM has licensed this technology from NeXT and has announced its intentions to provide it as part of its AIX environment for its high end PS/2 computers. Bill Gates of Microsoft has been quoted in Byte magazine saying that it will move to offer object-oriented development solutions as a better way to efficiently develop sophisticated graphics-based applications (Byte88). With all this news, it may come as a surprise to many that the Macintosh has offered object-oriented programming tools for quite some time. The language Object Pascal and its corresponding application development tool, MacApp have been available for a number of years. HyperCard and its HyperTalk language incorporate the principles of object-oriented programming. And even the Macintosh Toolbox contains hints of an object-oriented design. In this article we will examine the concept of object-oriented programming and its realization in the programming language Object Pascal. We will also discuss MacApp, Apple Computer's application framework, and the benefits it provides the programmer.

A Definition Well what then is object-oriented programming? Simply stated, it is a programming methodology which merges a program's data and algorithms into a single structure called an object. The actions performed in an object-oriented application are achieved by objects sending messages to one another.

In a typical procedural programming language such as C or Pascal, programmers approach data and algorithms as separate entities. Precise data structures are defined, then a hierarchy of procedures and functions are created to manipulate the strongly typed data. In this environment programmers concern themselves with issues of how things happen in a program and in what order. Conversely, object-oriented programming focuses on defining objects which encapsulate data and its operations. If the object-oriented paradigm is strictly followed, only the procedures and functions of an object may access the data belonging to the object.

An object-oriented programming language or system pro-

vides two fundamental tools: an object class mechanism and class inheritance (Stro88). The class mechanism is a construct in the language that allows the programmer to encapsulate data and algorithms called methods into objects. The second, and much more important feature of object-oriented programming, is class inheritance. Inheritance is a powerful tool that allows an object to inherit the properties and behavior from another object. Inheritance is important because it facilitates code reusability, simplifies a program's design and allows the programmer to concentrate on creating his own application rather than complete environment in which the unique portion of the application executes.

Two Examples Before delving into the details of Object Pascal, we offer two simple examples of object-oriented programming that you are most likely familiar with, but may not have recognized as being examples of object-oriented programming. Neither of these examples fully conforms to the definition of true object-oriented programming, however, they do closely resemble the behavior associated with object-oriented programming.

HyperCard and HyperCard Stacks can be viewed as simply a collection of objects among which messages are passed to perform certain actions. The objects in HyperCard are linked together in a hierarchy.

Consider the simple case of the mouse button being pressed while using HyperCard's Browse tool. When this event occurs, a message is sent to the object under the Browse tool. If this is a button or field, HyperCard sends a "mouseDown" message to the object representing the button or field. If there is no button under the Browse tool then the "mouseDown" message is sent to the next object in the hierarchy, which in this case is the current card, etc. For an object to properly process a message, it must have a message handler (i.e. a "mouseDown" handler in its script) for the specific type of message. If no message handler is present for the message, the message is forwarded up through the hierarchy of objects until a handler is found.

Macintosh Toolbox entities such as Menus and Windows offer another familiar example of object-oriented design. A menu or window is defined as an object containing data and a collection of algorithms which operate on the data in response to receiving a message. In Inside Macintosh, these algorithms are called definition procedures.

Consider the standard window as implemented by the Toolbox. It consists of a collection of data which defines such things as its content region and structure region. In addition, certain windows may have additional data such as a go-away region, drag region and grow region. Each window implements certain algorithms which create, dispose, draw and grow windows. When the Toolbox determines that a window must be drawn, it sends a "draw" message to the window. The window object receives the message and acts on itself to draw the window.

Within the Toolbox it is possible to create new window objects with definition procedures that behave differently when messages are received. For example, it is possible to create a window object which draws a round window in response to the "draw" message. Note, however, that definition procedures do not allow for class inheritance and therefore do not comply with the complete definition of object-oriented programming and design.

Object Pascal Object Pascal is Pascal with object-oriented extensions made to the language. In the early 1980's Apple Computer recognized the importance of object-oriented programming and sought to provide such

a capability within a traditional procedural language — Pascal. To accomplish this, Apple Computer invited Niklaus Wirth, the inventor of Pascal, to Apple to help define this new language. The initial version of this language was called Clascal, and was initially implemented on Apple's Lisa computer to create the Lisa Toolkit. Over time the language has been refined to its current definition as Object Pascal. And using the Object Pascal language, Apple Computer has developed an object-oriented application framework called MacApp which greatly simplifies the process of developing Macintosh applications. And now Object Pascal and MacApp have achieved even broader appeal with the introduction of TML Pascal II which implements Object Pascal and compiles MacApp. It is important to realize that Object Pascal is simply the Pascal language with only a very few extensions. In fact, it is quite impressive how so much capability is added to Pascal with so few changes to the language. In the following sections, we examine the extensions made to the Pascal language to create Object Pascal and then briefly show how Object Pascal is used to create MacApp.

Object Types The most significant change to Pascal in creating Object Pascal is the addition of a new data type called an object. An object type is introduced by the keyword `object` and follows with a structure very similar to a Pascal record. An object type first contains a number of data fields which can be declared as any arbitrary type including other object types. Unlike records, however, an object type may not have a variant part. Following the data fields, an object type may declare a collection of procedures and functions called methods. Methods are used to define the actions (algorithms) that the object type can perform. The following is an example of a very simple object type declaration.

```
TShape = Object
  fNext: TShape;
  fPrev: TShape;
  fBounds: Rect;
  procedure Draw;
  procedure Erase;
  procedure Move(newBounds: Rect);
end;
```

Object types also provide object inheritance. That is, an object type may inherit the fields and methods of another object type. Further, an object type which inherits fields and methods may declare new fields and methods specific to the type as well as override inherited methods. The following are examples of an object type which inherits from the TShape example above. Note that inheritance is denoted by specifying the TShape object type in parenthesis after the keyword `object`.

```
TRoundRect = Object(TShape)
  fOvWidth: Integer;
  fOvHeight: Integer;
  procedure Draw; Override;
  procedure SetCornerOval(ovWidth: Integer;
    ovHeight: Integer);
end;

TFilledRoundRect = Object(TRoundRect)
  procedure Draw; Override;
end;
```

In this example, the object type TRoundRect inherits all the fields and methods defined by the TShape object type, but then defines two additional fields, overrides an inherited method and declares one new method. The TFilledRoundRect object type further inherits from the TRoundRect type and overrides the Draw method.

There is no limit to the number of levels of object inheritance. The only restriction imposed on the use of Object types is that object type declarations must appear in the global declaration part of a program or unit.

Methods A method is a procedure or function which is declared in some object type. Method bodies are declared in global declaration part of a main program or in the global declaration part of a unit implementation. The declaration of a method is made exactly like a normal procedure or function with one exception. The method name must be written along with its object type followed by a period. Consider the following example:

```
procedure TShape.Erase;
begin
  EraseRect(fBounds);
end;

procedure TRoundRect.Draw;
begin
  FrameRoundRect(fBounds,fOvWidth,fOvHeight);
end;
```

Notice in both of these examples that the methods refer to fields within the method's object type. This is because every method has an implicit parameter called SELF which is the object which invoked the method at runtime. A method behaves as if a WITH SELF DO ... END surrounds the entire method body. Of course, an explicit reference to the SELF parameter is also allowed. For example, the TShape.Erase method can be rewritten as follows:

```
procedure TShape.Erase;
begin
  EraseRect(SELF.fBounds);
end;
```

The parameter SELF is particularly useful when a method must pass the object to another method as a parameter.

Creating Objects Objects are not created from object types in the way that normal Pascal variables are created. Instead, object variables are created using the standard Pascal procedure New. The New procedure allocates a block of dynamic memory for the object and returns a handle to the object. When an object is no longer needed, its memory can be deallocated by calling the standard procedure Dispose. These are of course extensions to the standard definition of the New and Dispose procedures. To store the handle to an object created by New, an object reference variable is declared using an object type. The value of a reference variable is either NIL (refers to no object) or a memory handle to the object's memory as allocated by the New procedure. While an object variable is defined by a memory handle, the caret (^) notation is not used to reference an object's fields or methods. Instead, the period (.) is used just as it is used to reference record variable fields.

The following code fragment illustrates how to declare a reference variable, create an object, assign values to its fields and call a method.

```
var aShape: TShape;
    aRRect: TRoundRect;
begin
  New(aRRect);
  aRRect.fBounds := someOtherRect;
  aRRect.fOvWidth := 10;
  aRRect.fOvHeight := 15;
  aShape := aRRect;
  aShape.Draw;
end;
```

Inheritance As noted earlier in this article inheritance is a very important property of object-oriented program-

ming, and is of course provided by Object Pascal. Object types can be declared to inherit the data fields and methods of another object type. In some cases though, the behavior of an inherited method may not be appropriate or sufficient for the new object type. In this case, the method is declared again as override. Thus, when an object of the new type calls a method which has been declared as override, it is the new override method which is executed and not the inherited method. In some cases, however, the overridden method is still useful to perform a "part" of the required action.

Consider the TFillRoundRect object type example given above. This object type inherits the all data fields and methods from TRoundRect and TShape, but overrides the Draw method because it is necessary to fill the interior of the round corner rectangle as well as frame its border. Because the Draw method for the TRoundRect object type already implements the code necessary to frame the border of the round corner rectangle, it seems reasonable to reuse this existing code by calling the inherited method. This is accomplished by using the INHERITED keyword as shown in the example below.

```
procedure TFillRoundRect.Draw;  
begin  
  PaintRoundRect(fBounds,fOvWidth,fOvHeight);  
  INHERITED Draw;  
end;
```

The TFillRoundRect.Draw method first fills the interior of the round corner rectangle then relies upon the inherited Draw method to frame the border of the round corner rectangle. Clearly, this example is rather simplified, but it should be clear the power that inheritance provides the programmer.

MacApp So what good is Object Pascal? Object Pascal is the language in which a very important application development tool was developed - MacApp. MacApp is an expandable application framework which automatically implements the standard features of a Macintosh application, thus allowing the programmer to spend more time working on the parts of an application which are unique to the application.

For example, every Macintosh application must support an Apple, File and Edit menu, desk accessories, multiple resizable windows, printing, etc. Supporting each of these features is a non-trivial task that every Macintosh programmer must endure. MacApp relieves the programmer of this burden by implementing each of these features for the programmer in a standard way. It is especially convenient to use MacApp because the responsibility for an application meeting the Standard User Interface is left to Apple and not the individual programmer.

While MacApp is made up of numerous object types, there are five fundamental object types that every program written using MacApp will work with. These are

1. TApplication: implements the main event loop and directs events to objects responsible for handling them.
2. TDocument: contains data used in your program and provides the methods required for manipulating the data.
3. TView: Process mouse clicks and draws your data on the screen.
4. TWindow: provides objects for representing and manipulating windows.
5. TCommand: represents undoable actions in the application.

The obvious comment at this point is "but my program does this differently..." so I won't be able to use MacApp. Fortunately, this is not the case. Because MacApp is

implemented using Object Pascal, the power of inheritance and overriding can be used to customize those parts of MacApp which are not appropriate to a particular application and must be implemented in a unique way. Perhaps the most important advantage for using MacApp is that an application will be relatively bullet-proof. That is, MacApp correctly implements the Macintosh user interface and its error handling routines will generally trap error messages and provide graceful handling of the error (Wils87).

Clearly, the windows implemented in an application will present and manipulate data in a fashion unique to that application. However, the window will most likely scroll, grow and move in a standard fashion. In this scenario, an application would declare object types which inherit from the MacApp the TDocument and TView object types, but provide new data fields to represent its data and override methods for drawing in the window. The application would still use many of the TDocument and TView methods for performing standard operations.

Summary The computers we use today and tomorrow are becoming increasingly difficult to program. Further, the capabilities of these machines and customer demands will require increasingly complex applications. It is quite likely that traditional procedural languages will not be sufficient to create the applications of the future. Object-oriented languages and development tools appear to provide at least a part of the answer to this problem of increasingly complex application development.

Hopefully this article has made you aware of the basic issues related to object-oriented programming and that you are probably already familiar with many of its capabilities as realized by HyperCard and the Macintosh Toolbox. Further, object-oriented programming tools are here today for the Macintosh as evidenced by Object Pascal and MacApp, and will continue to become more important in the future.

There are several existing products which contain Object Pascal source code. The TML Source Code Library II contains an example Object Pascal program called MOBJects. David Curtis has developed objects for custom menus using TML Pascal (Curt88). The MacApp Developers Association contains eight diskettes of object class libraries that you may use with MacApp. Example Object Pascal programs may also be found in (Rose87) (Schm86) (Schm87). Furthermore, the MacApp Developer's Association distributes a newsletter containing Object Pascal examples. (Schm86) is highly recommended for a much more in depth look at Object Pascal and MacApp. For a more brief discussion of Object Pascal, it may prove worthwhile to read (Doyl87) and (TML88).

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From: System Administrator
Subject: No intelligent life in Appleland (Marketing only, of course)

> From: Alexis Rosen. The announcement I'm referring to, of course, is the decision to trim back the R&D budget as a percentage of sales. Now more than ever before, Apple cannot afford to reduce its R&D efforts. The products that Apple needs to introduce over the next year are legion. [...] the list is endless. The Apple engineers can do the job- all of the technical people at Apple that I know are excellent. The question is, can marketing figure out what to do with these products? If not, they will never be released, and both we and Apple will suffer. < I look at this decision and see a number of points that have been bantered by the Apple II community for some time; most of them in response to Apple's decision to make the Apple II family their "cash cow" to support development of the Macintosh line. This was another decision that your cousin would have laughed at, too, if looked at in its long-term implications. Sales continued, but eventually they peaked (about 1987 when the Apple II line sold over one billion dollars due). But, when people started asking for more and more improvements to the Apple II line none seemed to appear. The Mac, on the other hand, was releasing new items on a regular schedule. The introduction of the IIGS boosted sales again for their peak in the 1987 era, but the introduction of the across-the-board 35% has dramatically caused sales to drop. A price increase which was applied to Apple II products, but was caused by a bad chip price projection on chips

for the Macintosh line of computers.

Now, Macintosh prices are going back down, somewhat, but the results of the losses are really just starting to reflect on both Apple II and Mac sales. Note, also, that Apple II prices have not gone down at all, yet for some reason Apple continues to think that the Apple II family will continue as a helper to be milked. While this may not be a direct reflection on the future Macintosh arenas, it tends to hint that prior marketing teams of the company might be in need of new direction.

Todd South

From: John Norstad
Subject: nVIR A and B

There has been some confusion over exactly what the nVIR A and nVIR B viruses actually do. In fact, I don't believe the details have ever been published. I just finished spending a few days researching the two nVIR viruses. This report presents my findings. As with all viruses, nVIR A and B replicate. When you run an infected application on a clean system the infection spreads from the application to the system file. After rebooting the infection in turn spreads from the system to other applications, as they are run.

At first nVIR A and B only replicate. When the system file is first infected a counter is initialized to 1000. The counter is decremented by 1 each time the system is booted, and it is decremented by 2 each time an infected application is run.

When the counter reaches 0 nVIR A will sometimes either say "Don't Panic" (if MacinTalk is installed in the system folder) or beep (if MacinTalk is not installed in the system folder). This will happen

on a system boot with a probability of 1/16. It will also happen when an infected application is launched with a probability of 31/256. In addition, when an infected application is launched nVIR A may say "Don't Panic" twice or beep twice, with a probability of 1/256.

When the counter reaches 0 nVIR B will sometimes beep. nVIR B does not call MacinTalk. The beep will happen on a system boot with a probability of 1/8. A single beep will happen when an infected application is launched with a probability of 15/64. A double beep will happen when an infected application is launched with a probability of 1/64.

I've discovered that it is possible for nVIR A and nVIR B to mate and sexually reproduce, resulting in new viruses combining parts of their parents.

For example, if a system is infected with nVIR A, and if an application infected with nVIR B is run on that system, part of the nVIR B infection in the application is replaced by part of the nVIR A infection from the system. The resulting offspring contains parts from each of its parents, and behaves like nVIR A.

Similarly, if a system is infected with nVIR B, and if an application infected with nVIR A is run on that system, part of the nVIR A infection in the application is replaced by part of the nVIR B infection from the system. The resulting offspring is very similar to its sibling described in the previous paragraph, except that it has the opposite "sex" - each part is from the opposite parent. It behaves like nVIR B.

These offspring are new viruses. If they are taken to a clean system they will infect that system, which will in turn infect other applications. The descendants are identical to the original offspring.

I've also investigated some of the possible incestual matings of these two kinds of children with each other and with their parents. Again, the result is infections that contain various combinations of parts >From their parents.

John Norstad
Academic Computing and Network Services

Northwestern University
From: Tom Coradeschi
Subject: Mac Interrupts

I've received the following replies to my queries about interrupt codes for the Mac SE. This is what you type when you hit the programmer's switch on the side of your mac. My thanks to those who responded. The respondees and their suggestions follow.

John Doner, Jonathan Leblang, Jon Schachter, Kenneth Sussmann.

G 409B24 (Mac SE ROM ExitToShell instruction)

Frank Beatrous, Declan A. Rieb, Larry Rosenstein.

SM 0 A9F4 (Mac ExitToShell instruction - machine independent) G 0

Chris Sterritt, David Fedor.

SM 0 3F3C 0002 A895 (ROM independent way to do it) G 0 James Li,

SM FA700 A9F4 (More bomb-proof than G 409B24 or SM 0 A9F4/G 0) PC FA700 G

Karl Use Macsbug

Patrick Beard

Macsbug 6.0 or TMON

Margret Buckley

G 4080D5CE (Mac II only)

Hope this helps all.

tom c

Electromagnetic Armament Technology Branch,

Picatinny Arsenal, NJ

From: Larry Rosenstein

Subject: Mac Interrupts

> Subject: Mac Interrupts >I've received the following replies to my queries about interrupt codes for the Mac SE. This is what you type when you hit the programmer's switch on <

I have a couple of comments about these.

> SM 0 3F3C 0002 A895 (ROM independent way to do it) > G 0 Be careful! This doesn't do an ExitToShell. It does a restart. If you were trying to preserve some data in another application under MultiFinder, this isn't the thing to do.

>James Li SMFA700 A9F4 (More bomb-proof than G 409B24 or SM 0 A9F4/G 0) > PC FA700 > G This is good only on a 1Mb Mac Plus or Mac SE. The address used here is the start of screen memory on a 1Mb machine, but the address will vary depending on how much RAM is in the machine. On Mac II family machines the screen memory is in an entirely different place. Finding the correct address of the screen memory is more involved.

I don't think this variation is any less bomb proof than storing the instruction in memory location 0. The only potential problem with storing in location 0 is that a program would have a bug and tries to access that memory location. Storing into that location may make the address illegal, which could cause crashes in these buggy programs. To avoid this, you would have to find a different place to store the instruction. (There are a couple of scratch areas in low memory, but I don't know how they are used by the ROM.)

Larry Rosenstein, Apple Computer, Inc. Object Specialist

From: Anthony E. Siegman

Subject: TK/Solver as a Technical Tool: What Happened To It?

In Germany in 1984 a colleague showed me a version of "TK/Solver!" (sp?) for the Macintosh which ran on a 512K Fat Mac, and impressed me very much. You typed all the equations for a given problem into an Equation Window. These did not have to be simple assignment statements, or be entered in any special order; you could type equations like

$\sin(2\pi x + \theta) + c = a x^2 + b y^2$

with functions and variables on both sides of the = sign.

As you typed equations into the Equation Window, all the variables you used were automatically collected in a Variables Window, where you could either assign values to them, if they were intended to be inputs, or leave them unassigned if they were intended to be outputs. There was full editing in both windows, and a simple procedure to step any of the input variables through a sequence of values or a range with controlled limits and step size.

When you had everything entered, you clicked a "SOLVE" button and the program implicitly solved the complete set of equations using the specified inputs to find all the unknown outputs, assuming you had enough equations to determine a solution. No programming or worrying about how to do the iterations was involved. If the input contained a sequence of values, the output could be a table of outputs versus inputs, or an auto-scaled plot of any variable versus any other variable. The program had all the

usual capabilities for Saving and Opening sets of equations, exporting results, printing results, and so on, and the whole system seemed to work beautifully.

It seemed to me this program was obviously going to be the analog for the scientific and engineering world of the spreadsheet for the business and financial world — the VisiCalc for the slide rule set. I would have sworn that it would spread like wildfire — I had visions of students doing problem assignments with zero brainpower by just typing in all the equations in the textbook and values for all the known variables, and letting SOLVE find all the unknowns.

Instead, this version of TK/Solver! was never widely distributed and now seems to have disappeared completely (I gather there were commercial difficulties with the software firm involved). More surprisingly, no major competitors have appeared, even though this would seem to have been a natural, and even though versions of TK/Solver! exist for other machines, e.g. for hp desktop machines. The only similar program I know of for the Mac is Borland's "Eureka", which seemed to me to be a poorer-quality version of what I remember seeing in Germany, and which does not seem to have had much success either.

Of course Mathematica and other considerably more complex programs are becoming available now, though Mathematica is very much more expensive and requires a fully loaded Mac II. But why did TK/Solver! or some similar program for the Mac never take off the way spreadsheets did? Are there just a lot more business and financial spreadsheet customers than scientific and engineering customers out there? Or was it just a fluke that this idea did not get picked up by others and spread more widely? Even with Mathematica today, I'll still like to have a small, simple, inexpensive TK/Solver! descendent to run on my Mac Plus. What happened?

A. E. Siegman

From: Murph Sewall

Subject: Five years and counting!!

VAPORWARE

Murphy Sewall

From the May 1989 APPLE PULP

H.U.G.E. Apple Club (E. Hartford) News Letter \$15/year
P.O. Box 18027 East Hartford, CT 06118 Call the "Bit Bucket" (203) 569-8739

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Fifth Anniversary. This is the 5th anniversary issue of the Vaporware column.

May '84 - the earliest Apple IIx (became the IIGS) rumors.

May '85 - Jazz for the Macintosh is late (and disappointing when it finally did arrive) and IBM PC-2 rumors prove unfounded (or Big Blue got "cold feet?").

May '86 - Rumors of a cartridge that makes an Atari ST Macintosh compatible (if you can find an Apple dealer who'll sell genuine ROMs) and announcement of the Migent "Pocket Modem" (both products now exist).

May '87 - Details about Andy Hertzfeld's "Juggler" (became MultiFinder) for the Macintosh and the introduction of the nicely designed, but too late, National Semiconductor 10 MIP, 32-bit 32532 processor (twice as fast as anything from Intel or Motorola).

May '88 - More details about the Intel 80486 (now known as the i486). Motorola announces a 33 MHz 68020 (never made it into a Macintosh), and MIPS Computer Systems announces the M3000 family said to be 20 times as fast as a VAX 11/780.

Son of SCSI.

The American National Standards Institute X3T9.2 Committee, commonly known as the SCSI Committee is nearing completion of a new SCSI-2 standard. Formal adoption of the new 32-bit data path (the existing SCSI path is 8-bit) is expected in 1990 or 1991. The new standard offers a maximum transfer rate of 40 Mbytes per second (the existing standard is 4 Mbytes), and features "command queuing" - a way in which a controller can accept new commands while executing previous ones. Interfaces for SCSI-2, which is upward compatible (current SCSI devices will work on SCSI-2 interfaces), are already being advertised by some vendors. - PC Week 10 April

Accelerated Mac II?

Motorola has announced a 50 MHz version of its 68030 CPU. The 12 MIP chip is a reduced geometry version of the 33 MHz

version of the same processor (the 68030 also is available in 16 MHz and 25 MHz versions). The semiconductor industry has not produced cache RAM chips with the 12 to 13 nanosecond access times needed to support a processor running at 50 MHz. However, Motorola's technical marketing manager for the microprocessing group, Jim Nutt says that a one-wait-state design using 25 to 30 nanosecond SRAM will still yield 10 MIP performance (approximately 2.5 times the speed of the new Mac SE-030 and Mac IIGX). Apple is expected to increase the speed of the Mac IIGX to 25 MHz - a 50% performance boost - in August (the SE-030 later in the year). Sample quantities of the 50 MHz 68030 are priced at \$650. - InfoWorld 10 April

Apple IIGS+ and "Budget" Mac.

An enhanced Apple IIGS, with an improved user interface toolbox and more built-in memory (but no mention of increased processor speed), may appear as early as this month's AppleFest. Apple insiders are saying this new version will be the last member of the Apple II line. John Sculley has been quoted once again as promising a "budget" Macintosh Plus compatible for "under \$1,000." Might that product be a MacCard for the IIGS (see January's column) creating the "Golden Gate" computer first described in last November's column? - BRCC Scarlett March and Random Access 1 and 8 April

New Quickdraw Features.

Apple will be adding the ability to create and manipulate scalable outline fonts to QuickDraw. The new feature will give Macintoshes with as little as 1 Mbyte of memory many of the same features as Display PostScript. - PC Week 3 April

AppleLink Macintosh Edition.

Apple and Quantum Computer Services are promising to make an AppleLink (Personal Edition) available for Macintosh users before the start of Fall. - InfoWorld 20 March

Plastic Energy.

Rumor has it that the LapMac (when it finally appears) will be very heavy (17 pounds) due to the weight of the battery needed to make it truly portable. That problem may be greatly reduced once commercial versions of plastic

batteries become available. Plastic batteries were discovered at a Japanese university a decade ago but have languished in laboratories all over the World awaiting an application suitable for their capacity. Plastic power packs for laptop computers which can hold a charge (shelf life) for years are expected to be one-third the weight of conventional batteries. - PC Week 3 April
Murph

From: TOLLIVER

Subject: **WARNING! Possible INIT conflict with Suitcase II 1.2.3**

I have discovered a possible INIT conflict with the new Suitcase II 1.2.3 and others (but I'm not sure which others). I downloaded and applied the 1.2.3 updater without problems. However, when I replaced the old Suitcase II 1.2.2 with the new 1.2.3, I could no longer boot. In the interest of possibly saving others some trouble, here, in approximate chronological order, is what happened and what I did about it.

Sometime after all of my many INITs loaded but before the desktop appeared and my start-up application had begun, the Mac would crash (into MacsBug). Returning to Suitcase II 1.2.2 fixed the problem. Configuration is Mac II, 5 Mb, System 6.0.2, MultiFinder, a whole host of INITs and cdevs, some freebie's and some commercial. For the curious, I found a number of possible cures and INIT conflicts. One was to remove SUM's HD Partition INIT. Another was to use "init cdev", holding down the space bar to get the list of INITs to allow, and disallow HD Partition INIT. No surprise there. But another solution was to simply start up with "init cdev" and allow *EVERYTHING*, including HD Partition INIT, to be used. NO CRASH!! But only when using the space bar to get the list and choosing everything could I boot. That is, NOT when just ignoring "init cdev" and letting it use the default, which was everything. But who wants to hold down the space bar everytime they boot up.

So is it Suitcase II 1.2.3, HD Partition INIT, or "init cdev"? Well, taking "init cdev" out of the System Folder did not help matters. Just made it hard to boot at all since I could no longer easily dis-

able HD Partition INIT or Suitcase II or anybody else. Had to boot from a floppy.

Alternatively I could hold down SHIFT to disable Suitcase II, with or without HD Partition INIT, and...no crash! Or I could hold down the COMMAND key to disable Multifinder...no crash. Or I could Set Startup to Finder instead of Multifinder...no crash. (Not the same as holding down COMMAND since COMMAND also disables some INITs as well.) Disabling the start-up application under MultiFinder did not help.

So the crash occurs under the following circumstances: MultiFinder active, HD Partition INIT active, Suitcase II 1.2.3 active, "init cdev" active but not in "interactive mode", and lots of other INITs active. It seems that "init cdev", when in "interactive" mode somehow sets a bit somewhere, initializes some globals, or *something* that prevents the conflict that would otherwise later occur. I tried removing a few other INITs, but without "init cdev" to make it slightly less painful, I did not have the patience to try many. Most made no difference. Just as I was ready to permanently go back to Suitcase II 1.2.2 (the bug fixes to 1.2.3 shouldn't affect me anyway), I discovered one other solution—remove the RWatcher anti-virus INIT. It has been effectively superseded by GateKeeper anyway. So now I'm back to my old setup, HD Partition INIT and all. Now who do I blame it on? RWatcher, Suitcase II, HD Partition INIT, all of the above, others...?

I doubt that anyone really knows what happened. But if anyone has any insights or similar experiences with Suitcase II 1.2.3, I would appreciate hearing them. And if I save someone else some trouble with the updated Suitcase II, then it will have been worth my trouble to type all this in.

John Tolliver

From: Chuq Von Rospach
Subject: "C Programming Techniques for the Macintosh" [warning!]

Here's a cautionary note for people looking for C books. There's a new edition of "C Programming Techniques for the Macintosh" by Zigurd and Terry Mednieks (Sams). The new edition

has rewritten the material to work with ResEdit and LightSpeed C instead of Redit and MacC. This makes it (as far as I know) the first generally available LSC book out there.

Since I've actually been sitting down and seriously trying to do some Mac programming in LSC the last couple of weeks, the book looked interesting. I was involved peripherally in the first edition (you'll see my name in the acknowledgements) and I thought it'd be a good book to hack with. Unfortunately, the book has some major problems. The primary application it uses as an example is a Mandelbrot set (in grays, not color...). This application is listed twice: in Chapter 8 as a basic application, and in chapter 9 including file open/save, printing and a few extra goodies.

I spent a day typing in all 1200 lines of code from the first example. After a couple of days of tracking down the various obligatory typos from that much brute-force typing, I found that the program was still buggy — to the point of bombing the Mac out from under the LSC source level debugger. Not nice. Since I was pretty sure that I got all of *my* typos, I started looking for other bugs.

I found them. Lots of them. By comparing the same routines in the Chapter 8 and Chapter 9 sources, I found about 30 different bugs or significant revisions — even though the program in chapter 8 is only supposed to be a subset of the full program. Many of the bugs are exceptionally stupid, sloppy ones (using resedit to create a dialog box with visible turned off, which causes the dialog to go bang when you try to use it; another was mixing up the window resize procedures so that when you resize a window vertically, you turn on the horizontal scrollbar and vice-versa!). The *only* thing I can think of is that when the book got laid out they accidentally used an obsolete version of the code for that listing. It's pretty worthless — although, fortunately, the (mostly) corrected source is available in chapter 9 [which actually makes me wonder why they wasted the pages printing the same stuff twice, but that's another issue....].

There are other problems with the

book. The design of the mandelbrot calculation doesn't allow for giving time to the system — so things like menubar clocks or Desk Accessories don't get any resources unless you toss an event at the system, since `SystemTask()` is only called in the event loop. The book was written for pre-LSC 3.0, so there's no discussion of the source-level debugger or any of the new features. The resource generation is shown by Resedit screendumps, but some of them are wrong and they don't explain how to use ResEdit — if you don't know going in, you're going to be totally confused.

All in all, this edition is significantly MORE buggy than the first edition and less useful for everyone — even though it's been converted to a compiler that is still in production, you would have been better off with the old book and making the changes yourself — the first book, at least, wasn't buggy like this.

The bottom line is this: if you're looking for a C book, look somewhere else. There *is* an LSC book due out any minute — one that is supposed to cover release 3.0 — and you're much better off waiting for it or buying the Takasuka book and figuring out the differences between MacC and LSC. This book has so many problems it's not worth trying to fix. Maybe if they come out with a new-new edition with unbuggy code, but not in the current format.

Chuq Von Rospach
Editor, OtherRealms



Info-Mac digests consist of submissions by individuals on the academic computer networks. Submission and distribution of these digests is by network, moderated by volunteers at Stanford University.

Usenet is a loosely-coupled network of co-operating academic and commercial computer systems. It is a non-profit network whose primary aim is the sharing of technical information and the spreading of research results.

Delphi is a commercial time-sharing and bulletin board system. The Delphi Digests are made available thanks to Jeffrey Shulman of Rutgers University.

Character Map & Folder Locker

from Update Disks 15 and 16

Character Map DA (on Update Disk 15)

Version 1.1 by G. Blaschek

Do you know how to generate the symbol for "... is not a subset of ..."? I give you a hint: it's in the Symbol font. You can't find it in the Key Caps DA? That's because you first have to press option- and then shift-A; Key Caps won't help you with such sequences. What? It does not work? Ah, you have a German keyboard! Sorry, I can't help you then...

You can now avoid experimenting with the Key Caps DA or looking characters up in keystroke/character tables. Whenever you want to insert a special character into your word processor document and you don't know the proper key combination (or sequence), pull down the Character Map DA from the apple menu, select the desired font from the CharMap menu, find the character in the map, click on it, copy it into the Clipboard and paste it into your document. Of course, Character Map inserts the character in the font that's currently active within your document. Thus you may have to select the generated character and format it with the desired font.

Version 1.1 works now in a similar way as the Key Caps DA provided by Apple. The generated characters appear in a line of text in the Character Map window. Character Map does not generate keystrokes any more, since it turned out that some word proc-

essors ignore keyboard events when none of their windows is active, and this technique did not work with other DAs. Now Character Map should work with all word processors and all drawing programs and even with other desk accessories.

Folder Locker/Unlocker™ (Demo Version) (on Update Disk 16)

Software Brewing Company
270 Apricot Lane
Mountain View, CA 94040

What does it do?

Folder Locker/Unlocker allows you to password protect folders on your disk. Once protected, the contents of a folder cannot be examined, deleted, replaced, etc. unless the folder has been unlocked using the password. This provides confidentiality for private documents and security for documents on a Macintosh™ system used by multiple persons or a system located in a common area. Each folder can have a different password.

How do I lock a folder?

Double click **Demo Folder Locker** to run it. You will see the standard file selection dialog. Using it, locate the folder that you want to lock. Do **not** double click the folder name — doing so will only open the folder. Instead, single click the folder name to select it and then click the **Select** button. Demo Folder Locker will then search for the folder which

may take several seconds on a large hard disk with many folders. After it locates the folder, you will be prompted to enter a password for the folder. Passwords can be one to eight characters long and they are case sensitive, e.g., password "abc" is different from password "ABC". Enter your chosen password and click OK. You must then re-enter the password you have chosen to be sure that 1) you remember it and 2) you have typed it correctly. The folder is now locked using your chosen password. **Don't forget your password.** You will need it to open the folder later. If your memory is bad, write the password down somewhere safe.

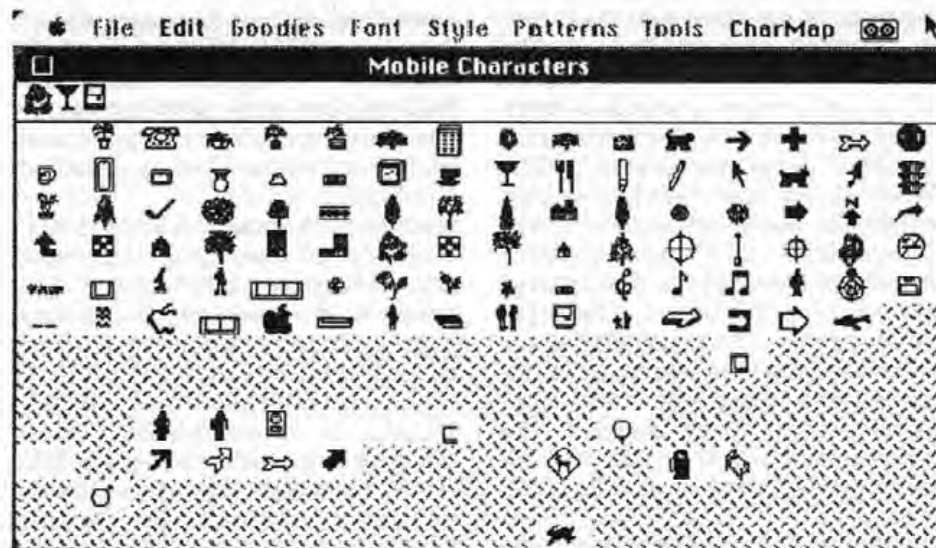
If the folder you select was previously locked, you will be prompted to enter the old password. After entering the old password, you can choose to remove password protection, enter a new password, or cancel. Removing the password eliminates password protection on the folder following the next system restart.

How do I unlock a folder?

Let's say that you are using Command as your key to indicate folder unlocking. To unlock a locked folder from the Finder, double click the locked folder while holding down the Command key. You will see a dialog box requesting your password. Enter it and press OK. Note that your password is not displayed on entry (only apple characters). This ensures privacy if someone else is looking on (the demo version does not hide the password as it is typed in). If you enter your password correctly, the folder will open and display the contents. The folder is now unlocked and will remain unlocked until you either relock it or restart your system.

If you entered the wrong password or clicked Cancel, the folder will open but it will appear empty. A locked folder also appears empty if you double click it without holding down the "unlocking" key.

If you are using the standard file dialog (what you see when you choose Open... in an application), the same method is used. Hold down the "unlocking" key, double click on the folder name, and enter the password when prompted.



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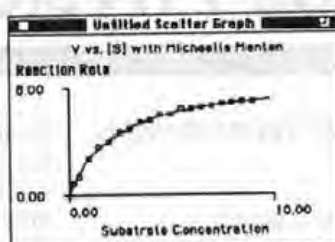
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Macintosh Technical Note #234

NuBus Physical Designs – Beware

#234: NuBus Physical Designs – Beware

Written by: Rich Collyer
June 1989

This Technical Note discusses the possible problems you might run into while designing a NuBus™ card. It covers some of the specifications which, if not followed, will have problems with current Macintosh machines, and possibly future machines.

If you are making a NuBus card for the Macintosh II family of computers, then you have to be very careful to follow the physical specifications which are listed in the NuBus specifications (IEEE P1196). There are two areas where some developers have run into problems. The first problem has to do with not positioning the external connector properly. The result is that some products have problems with the external hole on the back of the Macintosh IIcx. The second problem has to do with developers who run ribbon cables over the top of their boards to connect two boards. If a slot is not cut into the top of the board to allow the ribbon cable to sit below the top of the card, then the boards will have problems in our machines.

External Connector

The NuBus specification allows for an external connector plastics opening of only 74.55 mm x 11.90 mm. The Macintosh II and IIx allowed a significantly larger hole than the specification (80.00 mm x 17.00 mm) and some developers incorrectly assumed that Apple would continue to allow for this larger size. When the Macintosh IIcx came out, these boards were incompatible, since the IIcx only allows for an external opening of 75.61 mm x 14.00 mm. This opening is still larger than the IEEE specification. We could shrink this size all the way to the

limit of the NuBus specification in future machines. If you stay within the limits which are set down in the NuBus specification, then you should not have any problems with any of our machines.

There is one other important dimension which changed in the Macintosh IIcx; this is the intercard spacing. In the Macintosh II and IIx, the intercard spacing is set to the minimum space allowed by the NuBus specification (22.86 mm). In the Macintosh IIcx this dimension was expanded to 24.13mm. Figure 1 shows the connector opening and intercard spacing for the Macintosh IIcx.

Internal Connector

Several NuBus card developers have the need to connect two boards. The NuBus specification allows for this need with an auxiliary connector at the top of the card and next to the no component area. To connect the cards, you need to use a ribbon cable. The cable is run over the top of the card as demonstrated in Figure 2. The problem occurs when the ribbon cable is run over the top of a card and is not given a slot into which to drop.

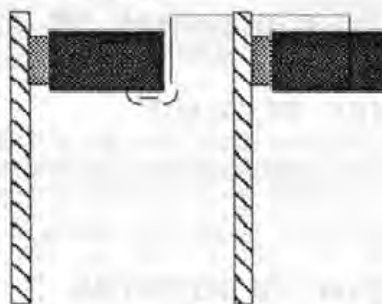


Figure 2—Side View of Internal Connection

Figure 3 (on page 68) is an example of the **wrong** way to make your internal connector. The ribbon cable will not fit over top of the NuBus card; you must make a slot at the top of your card for the ribbon cable. Refer to Figure 4 (also on page 68) for an example of

the correct way to make your internal connector.

If you cut a slot at the top of your NuBus card, you will not have problems with future Macintosh computers which utilize the NuBus standard. The slot needs to be deep enough for the cable to be flush with the top of the card.

The internal connector must not have any parts which extend into the "no component area." This means that if your connector has lock & eject tabs (like the internal SCSI connector) then the tabs must be below the "no component area."

The no component area is defined as the area of the card onto which you cannot put any parts. The lid of the Macintosh II family of computers has two fingers which hold the NuBus cards into place. These fingers are needed for stability, and they help to ensure that the cards will not be damaged in the event that the computer is knocked around. If there are components in the no component area, then the fingers will either break the components, or the lid will not sit correctly.

Conclusion

The moral of this story is that you should always follow the NuBus specifications which deal with the physical dimensions of your cards, even if Apple allows for more space in certain models of our machines.

If your board violates any of the NuBus specifications, or if you have run a ribbon cable over the top of your card, then you need to seriously consider redesigning your board.

Further Reference:

- NuBus—A Simple 32-Bit Backplane Bus P1196 Specification

NuBus is a trademark of Texas Instruments.

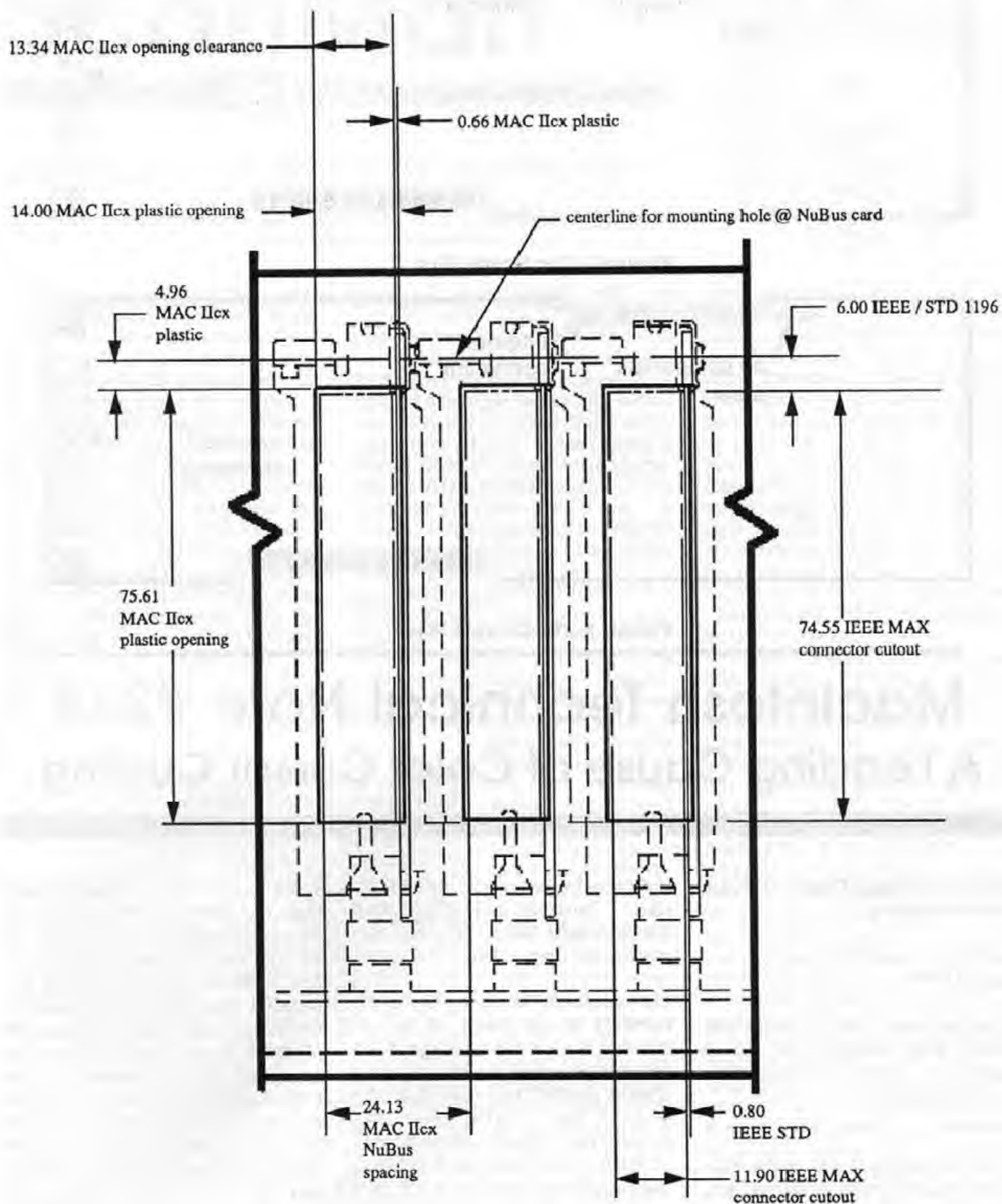


Figure 1-Macintosh IIcx External Connector Opening and Intercard Spacing

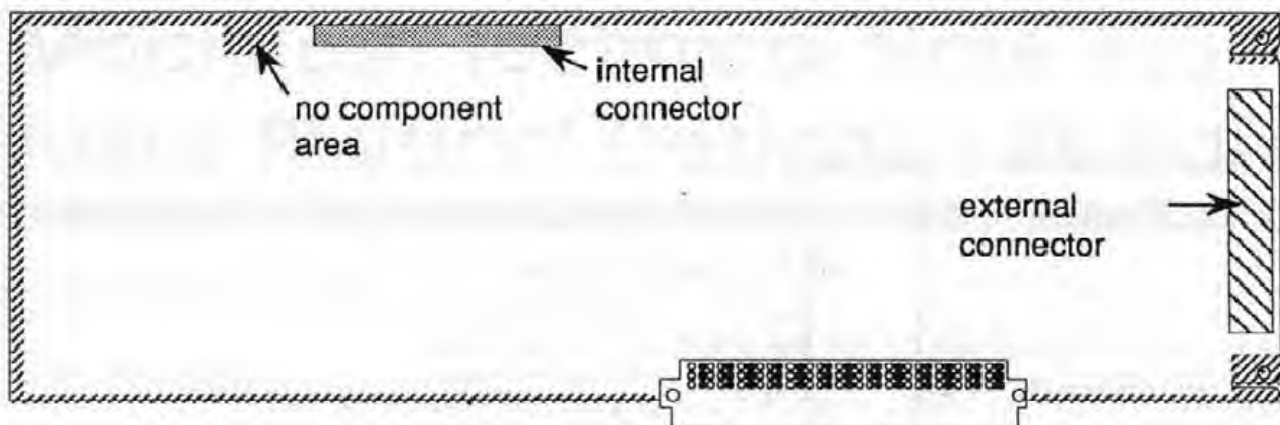


Figure 3-The Wrong Way

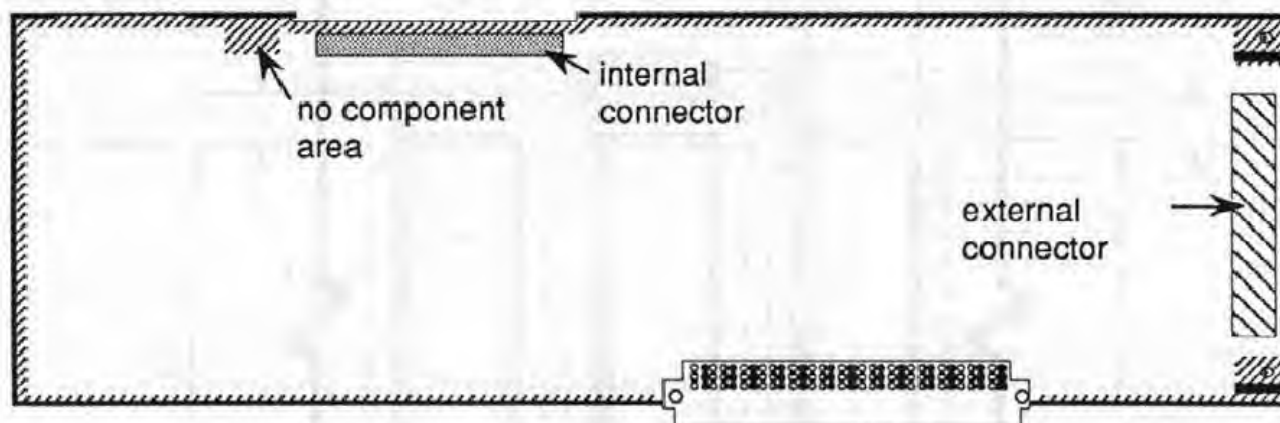


Figure 4-The Correct Way

Macintosh Technical Note #244

A Leading Cause of Color Cursor Cursing

#244: A Leading Cause of Color Cursor Cursing

Written by: Alan Mimms
June 1989

Working with color cursors you create from scratch can cause headaches. This Technical Note may help a bit.

If you're building an application that creates color cursors, you may encounter some quirks present in Color QuickDraw that manifest themselves in hard-to-understand ways.

If your cursor is, say, 15 pixels tall and 9 pixels wide, you might be

tempted to use these values for the `bounds.bottom` and `bounds.right` (resp.) in your cursor's pixel map. **Don't.**

The problem is that when the cursor's image needs to be expanded (i.e., when you specify a two bit-per-pixel cursor and the mouse pointer is on an eight-bit screen) the `_SetCCursor` trap rounds the width of the pixel map in such a way that you'll get only the space required for a 15 by 8 pixel map allocated for the expanded cursor data. When the cursor's image is expanded into this too-small expanded cursor data handle as a 15 by 9 pixel map, something in your heap will get munched.

The cure is simple. Make **certain** that you always specify that the `pixmapHandle^.bounds` be 16 by 16. This will cause `_SetCCursor` to properly allocate the expanded data area, and all will be well in the land. Since the amount of data **drawn** for a cursor is specified by the cursor's pixel values and CLUT, trying to save a few bytes by making the bounds rectangle smaller than 16 by 16 wouldn't have been very helpful anyway.



ScanMan™

A review of a hand-held scanner for the Macintosh by Keith Chamberlain.

I had seen several advertisements for the ScanMan hand held scanner in several magazines for both IBM and Mac versions and was very interested in a cheap reliable scanner able to do grey scales. I was therefore delighted when I was asked if I would like to review this product for the magazine. When it arrived as with everything I do all other work was put to one side to play with the new toy. As it worked out I had to carry out a few modifications to my system before this was possible. The system is supplied with the hand held scanner, SCSI box and cable, 12 volt transformer, 3.5 disk of software and a manual. On reading through the manual I discovered that the SCSI box was

internally terminated, and is supplied with a SCSI lead which can only be plugged into the back of the Macintosh with a 50 way SCSI port in the box for expansion. To be able to use the scanner with my internal hard drive and external SCSI laser printer I would need to remove the termination in the SCSI box. This is not a major problem as all that is needed is a screwdriver to remove the cover and then it is a simple task to pull the plug in terminators from the circuit board. The only difficulty I had was the fact that when using the scanner on another machine I then had to replace the terminators. This operation seemed to be carried out on a regular basis and would have

been much simpler if the manufacturers had followed Apple's lead and allowed external terminators to be used as standard. Once all the connections were made and the system booted up you have a choice of installing an application program which will run under Multifinder, or a desk accessory version of the same program which is what I decided to use.

A simple procedure is required to set up the SCSI device number. This also informs you of all the devices on line so that you can see if there are any conflicts.



Picture 1

After the SCSI set-up all that remains is to set up the scanner using a combination of three switches located on the scanner body. The first of these is a density control which allows you to set the line or dot size from line art to half tone settings. Next the resolution of the scan can be set from 100% to 400% which not only changes the scan quality but also swallows up large amounts of memory and disk space. Finally the contrast can be set to vary the definition of the scanned image. After this you click on scan in the ScanMan menu.

The scanner then becomes active and emits a red light. You then press a button located on the side of the scanner and draw the scanning head down the paper being scanned. This sounds very simple but is the stumbling block of the system. Due to the T shaped design and the single roller at the front of the T it is very difficult to maintain a constant rate of movement and to keep a correct alignment. This results in some cases in dramatic changes in quality throughout the scan and also a skewing effect on the scan. Due to this problem the success rate was probably 20%, but as rescanning is very quick it is not a serious problem.

One effect of skewing was that when trying to align two scans in a page layout program to form an A4 page it was almost impossible to get the edges correct.

A solution to the problem would be to make the device rectangular in shape and also to install a second roller. This would enable the scanner to be drawn along a solid edge to keep it aligned with the item being scanned and also to make it easier to maintain a constant rate of movement.



Picture 2

Once a satisfactory scan has been obtained it is possible to edit the scan using various tools such as dragging an edit box over unwanted sections and deleting with the delete key. There is also a FatBits option which allows insertion or deletion of single dots in the current scan density which means you can effectively edit at 300 DPI.

Every scanning option was tried to see which was the most effective and I finally decided on full half tone at 400% with low contrast. This gave the most satisfactory results when scanning line art or text from any magazine quality originals.

Pictures 1 to 3 are scans from Apple2000 magazine volume 2 issue 6. Picture 1 was reduced within Pagemaker to 50% of original size and has produced an acceptable reproduction of the original. Picture 2 was originally a scan with a grainy appearance and seems to have confused the scanner and produced the grid effect shown. Picture 3 shows the strong points of the scanner although some small detail has been lost the result is quite acceptable. Picture 4 is a scan of a black and white photograph and again contains the strange grid effect. Finally Picture 5 shows a scan from a colour print and shows that the scanner is capable of producing a grey representation using a dithering technique. I suspect it was also trying to

achieve the same effect with Picture 4 and had difficulty with the gloss finish of the photograph.

Varying results were obtained with strange effects appearing from time to time, most of which can be

Picture 3



Picture 4



put down to erratic movement of the scanning head including moving too fast, but some unexplained problems occurred and were repeated with subsequent scans usually when scanning in line art mode.

Overall the ScanMan produced satisfactory results although

scanning anything other than black and white was disappointing. If you are looking for a cheap fast scanner, especially with the desk accessory option allowing scans while in the middle of entering text into a page layout program, then it is a good buy. One sad fact to note is that the same scanner used on an MS-Dos setup costs much less although I suspect this is because of the SCSI box required on the Macintosh.



Picture 5

info

Product : ScanMan™

Publisher : Logitech plc

Available from :

Logitech (UK), Ltd.

The Tythe Barn, High Street

Edelsborough, Dunstable

Beds LU6 2HS

Tel: 0525 222211

Price : £ 345.00

Value :

★★★★

Performance :

★★★★

Documentation :

★★★★

Abaton

products for Macintosh

Interfax

Facsimile convenience is now as close as your Macintosh with the **Abaton Interfax 12/48** fax modem. A modem that functions as a data modem and sends and receives faxes. It's two modems in one for little more than the price of a data modem alone.

- Sends and receives in background with or without MultiFinder
- Schedules unattended transmissions any time of the day or night
- Transmits multiple documents to multiple locations
- Automatically logs fax activity
- Creates customised fax directories and distribution lists with up to 800 fax numbers. The number of directories and lists is only limited by hard disk capacity.

Fax Modem

- CCITT Group III compatible
- 4800bps, 2400bps transmission rates with automatic fall back
- Support for PNTG, PICT and TIFF file formats
- Standard 200x100 dpi and fine 200x200 dpi resolutions.

Data Modem

- 1200bps, 300bps data rates
- Compatible with Bell 103, Bell 212A, CCITT V.21, CCITT V.22 and Hayes AT command set.
- Full or half-duplex
- Tone or pulse dialing

NOT APPROVED FOR BT CONNECTION

Scan 300/GS

Abatons Scan 300/GS is a 300 dpi, 8-bit scanner that offers the superb clarity of 256 levels of true gray-scale scanning. With its scanning capability the Scan 300/GS produces scanned images that retain much of the richness and detail of the originals.

The flatbed design of the Scan 300/GS lets you accurately align and scan books, magazines and other documents that sheet feed scanners cannot handle. The removeable lid allows you to easily scan oversized drawings and maps.

Features:

- Flatbed design with removeable lid for oversized documents.
- 8.5" x 14" (21.6cm x 35.6cm) scanning area.
- Line art, halftone and gray-scale modes.
- Scans in 256 levels of gray-scale at 8-bits per pixel.
- Independant horizontal and vertical resolutions of 75 dpi to 300 dpi in 1 dpi increments.
- 255 brightness and 255 contrast settings.
- Mirrors and inverts scanned images.
- Abaton Scan DA, a desk accessory for the Macintosh:
 - scans images from within any Macintosh application
 - lets you preview images before scanning
 - supports TIFF, PICT, Encapsulated Post Script and Mac Paint formats
 - takes advantage of the full capabilities of the Scan 300/GS

ProPoint

ProPoint is an optical trackball that allows maximum cursor control. It is specifically designed for your Macintosh SE, II, IIfx and IIfx. ProPoint enhances your Macintosh with electronically accelerated speed and pin point accuracy -- the control needed with todays sophisticated desktop publishing and other design applications.

In the design:

ProPoint's advanced technology design is optical rather than mechanical with 70% fewer moving parts than the competition. This ensures digital accuracy and precision at 200 counts per inch, as well as less opportunity for failure. ProPoint has dual Apple Desktop Bus ports and the mean time between failures is 21.7 years. The sleekness and efficiency of this design is our guarantee to you of maximum productivity. Your ProPoint's patented technology and solid state design is so advanced and so reliable that Abaton is backing it with a five year guarantee.

Scan 300/S

Abatons Scan 300/S orchestrates your scan so every image is a command performance. Scan in true grayscale, and use your favourite desktop publishing software to edit and resize scanned images without distortion. Abaton Scan 300/S takes full advantage of high resolution output devices.

Scanner type	Flatbed
Scanning area	8.5" x 14" (21.6cm x 35.6cm)
Scanning time for 8.5" x 11" image	
Line art/half tone	25 seconds
Grayscale	50 seconds
Light source	Green fluorescent lamp
Scanning modes	Grayscale, Halftone (Bayer & Spiral) and line art.
Resolutions	72 and 300 dpi
Brightness control	16 settings
Contrast control	8 settings
Dropout colour	Light green
Grayscale	16 levels, 4 bits per pixel
Scaling (%)	100, 75, 66, 50, 33 & 25
Interface	SCSI

Abaton Scan300/S is supplied with **Digital Darkroom** image processing software.

Pricing

Interfax	£375.00
ProPoint	£99.00
Scan 300S	£1195.00
Scan 300GS	£1550.00

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Cirtech Diamond Hard Disk Drive

Ewen Wannop reviews the new 48 mb hard drive from Cirtech

I seem to have been talking a great deal about hard disk drives in the last few issues of Apple2000. Hard disks are one of those devices that are so indispensable that you cannot imagine how you ever managed without one. It is virtually impossible to use a Macintosh sensibly on disk drives alone, and indeed all but the most lowly of these beasts has a hard disk built in.

However like all things related to memory capacity, what you actually have is not enough, and you soon start to think of expanding your system to make life more bearable.

In recent months the price of hard drives has started the slow tumble downwards, and we are now seeing more and more drives coming on to the market in various sizes and flavours.

The Diamond Drive

Elsewhere in this issue, Dave Ward has reviewed a new drive for the Apple II. This drive is manufactured by Cirtech from Scotland, and is one of a pair of drives that are being launching on the market. These two drives are supplied formatted either for the Apple II or for the Macintosh, and come in two sizes nominally 32 mb and 48 mb.

However there are only a few manufacturers of raw drives, and so you are as likely to find the same drive unit in a drive supplied from Apple, as that from Cirtech or indeed any other manufacturer. The basic drive units are so reliable these days, that about the only difference you will detect between the many on the market is the seek time of the head. Typically 28 ms is a normal to look for these days. The Cirtech 48 mb drive I tested had a Seagate

ST157N drive rated at 28 ms inside. This fact was gleaned by the use of a SCSI disk utility, and not from prising the case open!

What you will receive

Cirtech supply their drives formatted and complete with all the cables that you need. They even include a terminator as well. It is simply a case of plug in and go. Including the terminator means that they are conforming to the Apple standard practice of not terminating the SCSI device directly. It is left up to you to insert a terminator at the last device of the SCSI chain. Cirtech have used 25 way 'D' plugs and sockets rather than the 50 way Centronics SCSI standard, so you may still have to obtain a normal terminator if you intend to daisy chain a drive on the end of the chain fitted with the 50 way kind of socket.

Cirtech provide no utility disk with the drive. This is a controversial point. If you have a hard disk crash, it is most unlikely that it will need any more than a simple Erase from the Desktop, but Cirtech give you no other alternative if anything more drastic occurs. The 48 mb unit is not recognised by HDFormat from the System disk. I presume Cirtech would reformat the drive for you if necessary, but this would mean you would be without the drive for the time it took to do this.

What it looks like

On the back of the drive Cirtech have provided a simple switch to allow the setting of SCSI priority between 0, 1, and 2. If this is not suitable for the existing priorities on your SCSI chain, specify the level you need when you order the drive.

A slim manual is provided, with all that you need to know about the drive. As the drive is really a plug in and go device, this is in fact ample information to operate the unit.

The really clever thing that Cirtech have done, and I am not referring to the pun in the drives name, is to make the actual drive look just like a standard Apple SC drive. Well almost like one, as it is only stands 2 3/8ths inches from the table. The standard Apple drive stands 3 inches tall. Both drives are the same width however, but the Cirtech unit is only 9 1/2 inches deep to the 10 1/2 inches of Apple SC drive. Of course this is just the right size to sit a MacPlus or Mac SE upon. However, the similarities do not stop there, the Cirtech unit is made out of metal, but in its smooth platinum finish looks just like the Apple unit even down to the thin horizontal recess running round the three sides and holding the LED display in the same place! Being a Cirtech drive, this LED is yellow rather than the usual red.

How it performs

This is one of the quietest drives I have heard. Cirtech have used one of their 'whisper' fans to cool it, and the Seagate unit is exceptionally quiet in operation.

All in all a very neat and pleasant drive to use. Well recommended as an expansion to a Mac SE, or as the prime drive for a MacPlus.

Ewen Wannop



info

Product : Diamond 48 & 32

Manufacturer: Cirtech

Available from :

Cirtech (UK) Ltd

Currie Rd Industrial Estate
Galashiels

Selkirkshire TD1 2BP
(0896) 57790

Price : 48mb £626.75 inc VAT

32mb £546.25 inc VAT

Value :

★★★★

Performance :

★★★★★

Documentation :

★★★

Confessions of a Computer Caprice

The trials and tribulations of an everyday computer user.

There are some people who are accident prone, you know, break limbs at any opportunity. Well, I seem to have a similar disability with respect to computers and computer programs. For instance, I thought "What a good idea MultiClip is. I have often wished that I could put more than one item into the clipboard without erasing what is already there". So I bought one.

Now for a devastating confession. I still use Microsoft File 1.0. I read in a magazine recently something like *only the totally brain-dead would use File* but I still do. After all, I used to have the document concerned in Jazz 1.0. File is slow but it still does what I want. After all, I am slow as well so it doesn't really matter. Anyway, I wanted to transfer a few items from File to HyperCard and I don't program either, so I thought I would copy each field in turn to MultiClip and then move them to File.

MultiClip doesn't work with File.

Well I had previously found that McSink didn't work with File either so I wasn't too disturbed. However, next time I re-booted the machine it crashed and after some trouble I found that it didn't crash when MultiClip was removed from the system folder and did crash when MultiClip was in the system folder.

Shortly after that I visited a friend and tried it on his machine. It booted OK, but he had only Vaccine in his Folder whereas my system folder occupies seven and a quarter Megs. We tried drawing objects in MacPaint and copying them to the clipboard and when we looked at the clipboard all the entries were there. When we tried

to get them back, however, only the last object entered would return. Pressing Option-Command-V should return the first object, pressing it again should return the second object and so on for all the objects. But not with my copy.

Similarly, pressing Option-Command-1 should return the first object, and replacing the 1 with the appropriate digit should return that particular object. With my copy all digits returned only the last item entered. When we rebooted and looked at the clipboard all items were still there and pressing the appropriate keys then returned the correct object until we entered a new object. Any of the keys then returned only the last object entered. I have not yet been able to remove the Inits and Cdevs from my machine to see which ones clash but more of that next time.

MacLink Plus

I have a friend who has been given a book to print, but he works on a Mac and the book chapters had been prepared on an IBM, in WordPerfect. An excellent chance to try my MacLink Plus, I thought, and invited him over with the discs. I switched on my Amstrad (hissss) eventually when I had found out which of the leads was the power lead (I don't use it often) and plugged it in, and inserted my MacLink Plus 5 1/4" disc into the disc drive.

Type MLPC the disc sleeve says, so I did and up came a screen saying it was waiting for the Mac to talk to it. I double-clicked on MacLink on the Mac hard disc, went through the screens using default values and selected transfer from IBM WordPerfect files to MacWrite files, selected the first

file and transferred. Blocks appeared to be transferred at a high rate until I got an error message asking if I was sure that these were WordPerfect files. I tried a different file and eventually got the same message so tried a transfer from IBM text files. These were accepted with no problem and in a very short time, with no more bother, all thirteen chapters were in MacWrite files ready for entry into PageMaker. In fact, the tabs on the contents page looked a little peculiar but would be easily correctable and would probably need changing in PageMaker anyway. But what a nice simple easy process it was. My only complaint was that the program should not open incorrect files. If you look for MacWrite files on a Mac it does not give you a choice of Word or WriteNow files. However, it may not be so easy in the IBM world to tell what kind of files you are looking at. At least Mac files carry information about the program that created them.

Upgrades

I have been having fun with official upgrades recently. Some time ago, at AppleCentre in the City, I bought "an official" i.e. one of those with a Union Jack sticker on it, copy of SuperPaint at a reasonable price. I filled in the registration form, and either with the package or sent to me later I had a leaflet offering various upgrades including the upgrade to SuperPaint 2. I asked for the first upgrade (1.1 or 1.2) and for the SuperPaint 2 upgrade and quoted my credit card number and its expiry date. I, of course, never saw the first upgrade. At the last MacUser Show I asked TMC, you know the ones with the Union Jack sticker and the adverts saying how much better off you are with an official import, when the SuperPaint 2 upgrade was shipping and why I hadn't had one. It had not been shipped yet, I was told, but it is going in December.

Either late February or early March I actually received a letter from TMC saying my credit card was now out of date and would I like to send my new expiry date because they were shipping SuperPaint 2. I sent a cheque instead but I don't think it really mattered because in April when I rang to complain about non-deliv-

ery I was told that they were not shipping until next week. I mean they only charge rip-off prices so that they can support the software but cannot be bothered to give valid answers in response to questions. At the best of times I don't regard *we are shipping next week* or whenever a valid answer, it is as good as being told the shop had plenty but it has just sold the last when you know they have never had any in.

I also bought a copy of FreeHand and registered it, but this time with Aldus. I got a letter saying FreeHand 2 was out but I had to get it from my dealer. So I went, with the letter to my dealer, AppleCentre in the City, who have always been extremely helpful, even with the problems that I seem to find, and asked for my upgrade. However, informing me appeared to be enough for Aldus. They hadn't bothered to inform the dealer. Eventually, when the information came through it appeared that I had to write to the dealer to ask for my upgrade, let him ask Aldus, let Aldus check that I was registered and supply my upgrade. I still haven't got one.

The only upgrade I have had some success with was ReadySetGo and even then I had troubles. I bought RSG3 from Heyden and registered it but then Letraset bought up RSG and my registration got lost so I had to write to Letraset when the 4.0 upgrade arrived. However they gave me details, sent the upgrade and informed me when the 4.5 upgrade appeared. And supplied it when I sent the money.

Printing Problems

I used to be editor of a little newsletter but now only do layout and print it but I had a problem the other day. I had printed out a proof copy of all the material I had been given at the time and then got new material. This was entered and I printed out a new proof only a day or so after the other proof. I found that my fancy lettering in Dorovar on page 1 and my credits in Regency Script beneath each of the articles came out as gibberish. I also had some trouble with headlines which are in Avant Garde or Helvetica. These sometimes appear as Courier as the program denies that the printer contains the appropriate font. Re-

selection of the text and a reminder of what font it is supposed to be usually corrects the problem but the Dorovar and Regency Script portions remained gibberish.

Since, at the time I also had HyperCard, Microsoft Word and Canvas 2 open under MultiFinder I closed HyperCard and tried again. This time all printed correctly so, presumably the printer driver was downloading the fonts from HyperCard and not from the system folder. But why should it? At any rate, I will keep HyperCard closed when I want to print from any other program.

I also had a problem printing with HyperCard under MultiFinder. The program selected PrintMonitor which operated for a while then said "Unknown" in "Unknown" would not print and stopped working. I tried a few more times then pulled PrintMonitor from the system folder. I tried again and the dialogue box told me that there was nothing wrong with my files but it could not find PrintMonitor.

When I replaced PrintMonitor it still found problems with "Unknown" in "Unknown" so I removed PrintMonitor again and rebooted. This time the HyperCard stack printed normally but I still have no idea what "Unknown" in "Unknown" is.

Canvas 2 has also been providing me with apparent stupidities. I wanted to do some disc labels for the latest library discs so I opened Canvas. I also had HyperCard and Microsoft Word open. I opened my blank labels drawing, went to Finder and obtained a picture of two HyperStacks discs. I went back to Canvas and tried to open the picture and was told I had insufficient memory.

Going to Finder I found that Canvas was taking 1.6M of which only about 300k seemed to be being used. I do not see how it could fail to open a picture in the remaining 1.3M, approx. I also found that when I went to Word to relate this, Word would not open the file in which I record my observations and refused to open it until I had quit Canvas.

I referred to ReadySetGo 4.5 above. Well, I have been using it and found my usual collection of problems. I altered the layout of a leaflet and printed it with no prob-

lems. But it needed further alterations, so I altered it and decided to start a list of costs in Acta. So I opened Acta and costed up several items that I had printed recently including the leaflet. I then went back to the leaflet to print it. I pressed Command P and nothing happened. I tried again and then accessed Print from the File Menu. Nothing happened. Perhaps Acta is causing problems, I thought, although it has never caused problems before. So I closed the Acta file. Or, at least, I tried to close the Acta file. Sorry error -42. After trying again, several times, I managed to close the RSG file and found I could then close the Acta file. I then opened the RSG file and printed it successfully. I was running under MultiFinder at the time but it was somewhat unusual.

Another problem with RSG under MultiFinder, at least I have only tried it under MultiFinder, is that, when inserting tabs, I select the text to be tabbed, obtain tabs from the Text Menu and position the pointers to where I want to tab. When I click the Apply or OK boxes I find that the tabs are applied everywhere but to the top line and to get the tabs applied correctly I have to select at least one line above the top line that I want tabbed to get the top line correct.

Now I have always had trouble with tabs in RSG. Version 2.0 appeared to allow only one set of tabs per document and whenever you arranged a new set on a later page it rearranged the set on other pages. Version 3.0 worked better but if you later wanted to change some of the data it turned out to be almost impossible to select it for alteration unless you redid the whole table. Now Version 4.5 appears to have its problems. I did not use Version 4.0 very much so never found its foibles.

John Jotting



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CAT	309.35	269.00
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100 Sheets	£18.40
500 Sheets	£86.25
Formatting Disk	£10.35

These labels (12/label) are exact size, flush fit, normally unobtainable in the UK. Format disk contains template for most DTP programs. Call for free sample

Toner Cartridges

	LW, LW+	INT
New Black	£79.35	£81.65
New Blue or Brown	£126.50	£136.85
New Light Blue or Red	£178.25	-
Recharge	£51.75	£51.75
New JUMBO (50%+)	£97.75	-
Recharge JUMBO	£77.05	-

Upright II stand £45

3 1/2" Floppy Disks Double Sided 100% LIFE GUARANTEED £18.40 for 12 Includes FREE Anti Virus & IA Sampler disks

Digital Darkroom	263.35	229.00
DiakTop 3	44.85	39.00
Delux Mus.CS 2	102.35	89.00
Dreams	320.85	279.00
Falcon	41.98	36.50
Ferrari Gnd Prix	39.68	34.50
FileGuard	136.85	119.00
FileMaker II	258.75	225.00
Fontastic Plus	67.85	59.00
Fontographer	258.75	225.00
FontSizer	102.35	89.00
Formulator	148.35	129.00
Foxbase MU	598.00	520.00
Foxbase SU	396.75	345.00
Freehand II	488.75	425.00
Full Impact	297.85	259.00
FullWrite Prof.	297.85	259.00
GATO	28.18	24.50
GraphicWorks	85.68	74.50
Graphist Paint	458.85	399.00
Grappler LQ	113.85	99.00
Grappler Mac	90.85	79.00
HFS Backup V3	60.95	53.00
HFS Navigator	34.44	29.95
Hypercard	40.25	35.00
Illustrator '88	488.75	425.00
InBox (Starter)	270.25	235.00
Just En. Pascal	60.38	52.50
Keymaster	90.85	79.00
King of Chicago	45.43	39.50
Laser FX	159.85	139.00
Laser FX Paks	44.85	39.00
Leather Goddess	14.95	13.00
LetraFonts (ea.)	75.90	66.00
LetraStudio	458.85	399.00
Lightspeed CV3	159.85	139.00
LS Pascal V2	90.85	79.00
MacAsm	102.35	89.00
MacAuthor	224.25	195.00
MacBarcode	631.35	549.00
MacDraft	201.25	175.00
MacGolf	51.75	45.00
MacGolf Classic	63.25	55.00
MacLink Plus	166.75	145.00
MacSchedule	159.85	139.00
MacSeq	63.25	55.00
Master Juggler	44.85	39.00
Mathematica	493.35	429.00
Mathematica II	799.25	695.00
MicroPlanner 6	458.85	399.00
MS-Chart	97.75	85.00
MS-Excel 2.2	251.85	219.00
MS-File 2	113.85	99.00
MS-Flight Sim	44.85	39.00
MS-Mail (1-4)	194.35	169.00
MS-Mail (1-10)	343.85	299.00
MS-Mail (1-20)	546.25	475.00
MS-Mail (1-32)	799.25	695.00
MS-Power Point	251.85	219.00
MS-QuickBASIC	97.75	85.00
MS-Word 4	251.85	219.00
MS-Works	182.85	159.00
Multi-Ad Creator	769.35	669.00
Music Publisher	600.88	522.50
NISUS	274.85	239.00
Omnipage	684.25	595.00
Orbiter	28.18	24.50
Pirates	43.13	37.50
Pixel Paint Prof.	297.85	259.00
PT 109	43.13	37.50
QuickDex	40.25	35.00
QuickKeys	79.35	69.00
Rapport	201.25	175.00
ReadStar II	500.25	435.00
ReadStar II +	1006.25	875.00
Reports	67.85	59.00
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Smartscrap/Clip	56.35	49.00
Stepping Out II	67.85	59.00
Studio 8	293.25	255.00
Style (Quark)	281.75	245.00
Suitcase II	56.35	49.00
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Super 3D	178.25	155.00
Super 3D II	339.25	295.00
SuperCard	136.85	119.00
SuperGraphics!	649.72	565.00
SuperLaserPool	297.85	259.00
SuperPaint II	136.85	119.00
Tempo II	109.25	95.00
Tetris	28.75	25.00
Text/Pert 3.0	799.25	695.00
TOPS Dos	128.80	112.00
TOPS Flashbox	113.85	99.00
TOPS Flashcard	113.85	99.00
TOPS Mac	159.85	139.00
TOPS Netprint	113.85	99.00
TOPS Repeater	113.85	99.00
Vicom III	189.75	165.00
VideoWorks II	166.75	145.00
WingZ	316.25	275.00
WorldPerfect	224.25	195.00
World Builder	43.13	37.50
WriteNow II	136.85	119.00
Xpress 2	626.75	545.00

LASER FONTS

• Adobe Typefaces (1-97) (Mac or IBM & Compatibles)		
#14,37,47,68,69,72	each are	317.40 276.00
#23,31,38,39,40,41,42,44,46,49,57,63,64,70,71,79,80	each are	240.35 209.00
#3,10,22,29,32,33,43,45,50,53,55,56,58,59,60,73,76,87	each are	120.75 105.00
#21,25,35,75	each are	79.35 69.00
All others		155.25 135.00
IBM Screen Fonts set of 10		155.25 135.00
• Casady		
Fluent LaserFonts 67.85		59.00
Compugraphics		
Garth Graphic, Antique Olive, Collage, Nashville Med, Novarese Book, Shannon Book, Symphony, Triumvirate.	each are	159.85 139.00
• Lexitrope		
BorderFont I/II	67.85	59.00
• Monotype (Mac & IBM)		
Arial, Baskerville, Bembo, Bodoni, Calvert, Century, Clarion, Gill, Goudy, Headliners, Imprint, Ionic, Nimrod, Plantin, Rockwell, Sabon, Times New Roman, 20th Century	from	105.00
• Software Complement		
Compl. Type	67.85	59.00

HARDWARE

Memory (RAM) Upgrades		
Add 1Mb to Plus	270	235
1Mb SIMMS	201	175
Jackie	903	785
Accelerators for Plus		
Mac20MX-16	684	595
Mac20MX-25	1,144	995
MC68881-16	229	199
MC68881-25	569	495
Accelerators		
33/030SE30	2,726	2,370
33/030 II	4,888	4,250
33/030 IIX	5,233	4,550

HARDWARE BARGAIN OF THE MONTH

High Density Floppies

£39.10

(Manufactured by SONY)

• Digitizers		
New BitPad Plus	339	295
Numonics 2705	546	475
• Modems		
Stradcom (BT apprvd) 206	179	
FaxModem	403	350
Ethernet Modem		call
• Miscellaneous		
Cables & Networks		call
Cognicar OCR	2,995	2,850
Drive 2.4	305	265
Expanse & Plus	715	622
Film Recorder	9,194	7,995
MacOpener Kit	29	25
MacRecorder	160	139
NeuNet & Phonenet		call
• Displays		
Nutmeg		
19" Mono	1,333	1,159
19" Gr/Sc for II	2,243	1,950
16" UL/Vw Col II	3,105	2,700
20" UL/Vw Col II	3,853	3,350
Xerox FPD 15"	1,144	995
E-Machine		call
RasterOps		call
SilverView		call
• Printers (PS 300 dpi)		
Business LP	3,278	2,850
PixelMaster (col)	8,568	7,450
Mitsubishi (A3 col)	7,245	6,300
• Scanners		
Agfa 600 GS	3,444	2,995
Agfa 800 GS	3,680	3,200
Barneyscan	8,625	7,500
Scanjet Plus 2560	3,954	1,699
Howtek Col A3	9,143	7,950
Howtek Col A4	7,786	6,770
Howtek Col 35mm	10,638	9,250

STORAGE DEVICES

We supply storage devices from all the major manufacturers. Internal & external hard disks, tape backup units, removable hard disks, combination units, WORM drives, network server units, CD drives, etc. To complement the drives we also supply mirroring software (TwinWrite), partitioning and recovery software (SUM) plus many other useful utilities.

TwinWrite 684 595

• Rodime (Other sizes pls call)

Cobra 45 internal	879	764
Cobra 45 external	947	823
Cobra 70 intl.	1,014	882
Cobra 70 extl.	1,081	940
Cobra 100 intl.	1,251	1,088
Cobra 100 extl.	1,318	1,146
Cobra 215 intl.	1,656	1,440
Cobra 215 extl.	1,724	1,499

Other manufacturers
Qisk, Cti, Everex, CMS, Daynatek, Reflex, Cirrus, Irwin, Sony, Magstore, Quantum, etc.

instant art 300

(VAT incl)

	300 dpi	75 dpi
11Mb of animals, birds, fish, reptiles, etc.	£110	n/a
4.8Mb of festive season images	£68	£34
4Mb of images of children doing what children do	£68	£34
3Mb of educational images, from all ages	£68	£34
4.8Mb of illustrations of food and drink	£68	n/a
4Mb more of illustrations of food and drink	£68	£34
2.4Mb of hands with tools, food, holding cards, etc.	£68	n/a
3Mb of medical & health illustrations	£68	£34
3Mb of illustrations of men's heads in various activities	£68	£34
4Mb of of sea associated images, from the beach, to over water & under it	£68	n/a
3Mb of theatre & stage related images	£68	£34
3Mb of images of recreational sports, ballooning, skydiving, archery etc.	£68	£34
3Mb of images of sports, skiing, cricket, golf, rugby etc.	£68	£34
5Mb of travel related images, Pyramids, Eiffel Tower etc.	£68	n/a
75 dpi files of the UK with roads, railways, counties, cities etc.	n/a	£34
4.8Mb of wedding images for cards, invites etc.	£68	n/a
3Mb of modern women's fashion studies	£68	n/a
3Mb of women's heads in various activities	£110	n/a
3.2Mb of EPSF files of the UK with roads, railways, counties, cities etc.	£110	n/a
EPSF outlines of greater europe	from £40	n/a
EPSF files of individual countries with major cities, towns, roads etc.	£102	n/a
All the British Tourist Board Symbols as EPSF files	£56	n/a
Over 200 British Tourist Board Symbols	£56	n/a
9 shades of grey for each font (per font)	£56	n/a
Watermark effect for Times, Helvetica & Symbol	£52	n/a
Watermark effect for all LW-Fonts	£102	n/a
Add Fractions (eg. 2/3) to Times, Helvetica & Symbol	£52	n/a
Add Fractions to all LW-Fonts	£102	n/a
We can add fractions to any downloadable PostScript font	£68	n/a
50 forms in PICT, MacDraw, Superpaint or PageMaker format	£56	£56

All Instant Art Graphics are also available for IBM & Compatibles and on WORM disk (Panasonic etc)

Instant Art Sampler Disk: £7

• Animals
Christmas
Children
Education
Food & Drink
Food & Drink 2
Hands
Medical & Health
Men's Heads
Nautical
Performing Arts
Recreation
Sports
Travel
UK Atlas
Weddings
Women's Fashion
Women's Heads
PostScript Atlas UK
PostScript Maps-Europe
PS Maps-Country Modules
PostScript Tourist Symbols
PostScript 'Tourism' Font
GreyFonts
GhostFonts mini set
GhostFonts full set
FractionFonts mini set
FractionFonts full set
FractionFonts for your font
Business Forms

We're not going to be undersold ... provide proof of a genuine better offer for any product listed here from anyone in the UK within 14 days of purchase and we'll refund the difference

Mac Library

There are 3 new demonstration disks in the library this month and 5 more Update disks.

Disk 107 Demo 17

This is a limited edition of the comms program **VICOM**.

Disks 108/109 Demo 18 and 19

A two disk demo of the graphics program **Studio 1** (see page 47).

Disk 912 Update 12

PrFlds XCMD 1.9

This is a new version of **PrFlds**. **PrFlds** is a general purpose print XCMD for HyperCard that allows the printing of any field, or any other text including the evaluation of any HyperTalk expression, in any font/size/style or placement for any of the text objects specified (up to 100 objects per card). It also allows for drawing of lines on the page and multiple cards per page (including multiple columns). You can select cards by some criterion specified in a HyperTalk function.

Elan

This distribution contains the **ELAN** programming environment version 1.5 for the Apple Macintosh. This distribution also contains a documentation of the programming environment which is written in LaTeX.

SearchReplace XCMD

This is a stack which contains an XCMD called **SearchReplace** that adds a replace feature to HyperCard. The stack explains how to use the XCMD in detail.

Cmd History

After installing **Command History** for HyperCard, you can select previously typed commands from a "History" menu. You can also recall previously typed commands to the message box so they can be reexecuted.

Mount-Unmount XCMD

Version 1.06 This is a HyperCard stack containing two XCMDs: one that mounts AppleShare volumes, and another one that unmounts volumes.

Almanac

Version 1.52 This is a shareware

Hypercard stack used for astronomy calculations. Chebyshev polynomials are used to calculate planetary positions. Solar coordinates, as well as, rising and setting times are also calculated. Also included are predictions for eclipses of Jupiter's Galilean satellites. \$5 is the shareware fee.

Higher menus

Version 2.0 **HigherMenus** is an INIT/cdev combination that allows the user to begin hierarchical menus in the menu bar. It's great if you find yourself constantly using a sub-menu, and you don't want to go down a menu, then over. **HigherMenus** requires 4.2 or later. Documentation is included.

ScrollCtrl XCMD

This is a hypercard stack which contains an XCMD, called **ScrollControl III**, that enables developers to have a scroll bar, which can be used as any variable control would, in their stack. The stack explains in detail how the XCMD works.

Pie menus

This file contains a HyperCard stack that utilizes popup pie menus.

Disk 913 Update 13

TN /6/89

This is the latest issue of **Technical Notes** from Apple Computer Inc. for the Macintosh.

MacBinary

Version 1.0.1 A better way of downloading MacBinary files.

GIF scrs

Some 'C' source code that will read and decompress a GIF image file. (This program converts it to a Sun Raster image)

Pict2X

This is **XBitmap**, a utility program which converts Macintosh 'PICT' files, such as those created by **MacDraw**, into bitmap files suitable for use with **X Window System** programs. It can also be used to view **X Bitmap** files, view 'PICT' files, and to save an image as a 'PICT' file.

Foxbase

These are three small utilities

written for **FoxBase** programmers.

Disk 914 Update 14

TeleWar

To make the **TeleWar** demo run on the Mac II, you first need to go to the **Control Panel** desk accessory and choose the **Monitors CDEV**. Select **B&W** mode and 2 grayscales.

Star 'Roids 5.4.1

Chinese Chess

This is the Hypercard stack "Chinese Chess" which replays games of Chinese chess. The games are recorded in the conventional notation, which is different from that of Western Chess.

TurboBox (not Mac II)

Version 1.0 A 3D graphics program. Currently only works on a Plus or SE.

Raytrace

This ray tracer was originally ported to the Mac by John Lim and Jason Castan. Includes an LSC project and source. Compiled using LSC and needs colour QD to run. The current project also uses the 68881.

Disk 915 Update 15

Character Map

DA Version 1.1 For all those who don't know what **Character Map** is for: It is a replacement for Apple's **Key Caps DA**. **Character Map** displays a table of ALL available characters in a selected font and allows you to (more or less) directly insert these characters into your text or graphics document(s). There is no more need to memorize option-shift combinations or - even worse - key sequences.

SF & I

Version 1.01 of **SF&I**, a SCSI Formatter and Installer. Version 1.01 corrects two problems:

1. The previous version reset the SCSI bus while searching for SCSI devices. This nasty behavior has been removed. Instead, a "Test Unit Ready" command is issued to each selectable device.
2. In case of an error, the previous

version always insisted that no Sense data could be obtained. (Unless it really couldn't, in which case it displayed garbage.) This has been corrected. There are no changes to the device driver.

Virus Detective

DA Version 3.0. VirusDetective is a DA for tracking down viruses (or any resources) in files. You specify the resource type and various attributes. Once the offending resource is found it can optionally be removed from the file (use this feature with caution) or file deleted. The user can update the search list at any time. Shareware.

Version 3.0 adds ability to read/write search list from/to a file; revamped help system (can even copy help to clipboard); multiple search criteria per string; file modification dates always reported/logged and still more!

dLib

d'Librarian 2.48d (DEMO VERSION) together with a FullPaint file that shows what the multiple column output from a printer would look like.

Ignisound

Version 1.5 This is a cdev which allows you to play a sound (snd resource) at startup.

DF manager

Here is the latest version of SuperMac Technology's hard disk management software, Manager 4.0. This software will ONLY work with SuperMac's DataFrame/XP disk drives.

Init Cdev

Announcing version 2.0 of 'init CDEV' - now faster & with temp feature 'init CDEV' enables you to activate/deactivate INITs and CDEVs without having to move them in and out of folders. This can be accomplished from the Control Panel or during Startup. This latest release offers an (almost) infinite improvement in speed and the provision of a 'Temporary' option. Instructions are included.

ShowCInit

Version 1.0B2. Allows you to add animated icons, color icons, sounds and god knows what else, to your INITs. Written by Joe Sternlicht and Andrew Diaz; they ask a \$1 shareware fee. With docs.

Diss Bits

These are the sources for Mike

Morton's DissBits code. The sources are in TLA format and will have to be converted to assemble under MDS or MPW.

Fade to Black

Version 3.1.1 of Fade to Black. It fixes three problems with version 3.0.

World Pop DA

DA Version 1.0 This is a desk accessory that shows the current world population. It is updated each second and provides a relatively accurate estimate of the current population. Click in the DA window for information.

HexFlags

DA Version 1.2 HexFlags is a "programmer's helper" desk accessory which lets you calculate the enableFlags field of a menu resource by clicking checkboxes 'on' or 'off'. Separate "Rez" and "ResEdit" modes allow quick calculation of this number for copy-'n-paste entry into either MPW ".r" source text, or the ResEdit MENU template.

Daylight

MainWDEF

Disk 916 Update 16

TappyType

CDEV Version 0.94 This is version 0.94 of TappyType, an "atmospheric" Control Panel device. It's freeware, so please try it out and let me know what you think. Any suggestions for improvement will be welcome. Note that TappyType is now compatible with QuicKeys(TM). The previous release (V 0.91) was not.

Clipboard Magician

DA Version 0.5 The Clipboard Magician is a prototype written to explore certain concepts. It is freeware. You may copy it and use it freely, but it may not be redistributed as a commercial product. Apple Computer Inc. retains the copyright, but this is not an officially released and supported product from Apple Computer.

The Clipboard Magician displays the scrap and let you manipulate it.

Folder Locker

Demo Version 1.0 Folder Locker/Unlocker allows you to password protect folders on your disk. Once protected, the contents of a folder cannot be examined, deleted, replaced, etc. unless the folder has been unlocked using the password. This is a limited func-

tionality version of the full product. It still permits protecting one folder and the overall security is reduced over that of the full product.

Virus Alarm

WindowList

INIT Version 1.3 WindowList is an INIT that pops down a list of open windows from the title bar of a window. Selecting an item from this list will bring that window to the front. Documentation is included.

IconWrap

INIT Version 1.2 IconWrap is an INIT that will automatically "wrap" the icons displayed at startup to begin a new row when the edge of the screen has been reached.

Scroll Limit

CDEV Version 1.0 Scroll Limit is an INIT/cdev that allows you to select global threshold and repeat delays for scroll bars. If your scroll bars seem "too fast," Scroll Limit will let you adjust their speed.

GDraw

Version 1.0 Here's a simple graphics demo that is sort of a crazy cross between a bouncing ball and a physics lecture.

Spiro

Spiro is an interactive HyperCard Stack which is fun for kids of all ages!. Pop-up menus allow easy choice of parameters to create amazing "spirographic" drawings.

DeskClock

INIT Version 1.0 This is DeskClock, an init which gives you an analog clock in a window which 'floats' from application to application.

Launch init

INIT Version 1.1 This is an INIT that records Macintosh usage information to a specified file. Information recorded include program name, date, time, length of use, and user name. System startup time is also recorded and more.

5th Gen fixes

Neural

This program allows you to make and train simple three layer neural networks on the Macintosh.

Retrospect Archiver Demo

Archiver Demo Stack This stack describes Retrospect (a new file archiving system by Dantz software currently under testing). Requires HyperCard and Stuffit.

Giffer1.03

User Groups

London Region

ESSEX GROUP

CONTACT - Pat Bermingham Tel : 02065 460326
 VENUE - The Y.M.C.A., Victoria Road, Chelmsford
 MEETS - Third Friday of every month

CROYDON APPLE USERS GROUP

CONTACT - Graham Attwood Tel : 0181-871-1511
 VENUE - 515, Limpfield Road, Warlingham, Surrey
 MEETS - 7.30pm on the third Thursday of every month

HERTS & BEDS GROUP

CONTACT - Norah Arnold Tel : 04942 525111
 VENUE - The Old School, 1, Branch Road, Park Street Village, St Albans, Herts.
 MEETS - 8.00pm on the first Tuesday of each month

KENT GROUP

CONTACT - Richard Daniels Tel : 01822 514113
 VENUE -
 MEETS - Contact Richard

LONDON APPLE II GROUP

CONTACT - Chris Williams Tel : 01-4646 10310
 VENUE -
 MEETS - Contact Chris

LONDON MACINTOSH GROUP

CONTACT - Maureen de Saxe Tel : 01-4776 29810
 VENUE - Room 683, London University Institute of Education, Bedford Way, London, WC1
 MEETS - 6.00pm on the second Tuesday of every month.

M25 BUSINESS MAC GROUP

CONTACT - Jim Panks Tel : 01753 451343
 VENUE - Sir Mark Collett Pavilion, Heaverham Road, Kemsing, Sevenoaks, Kent
 MEETS - Phone Jim for details

SOUTH EAST ESSEX MAC GROUP

CONTACT - Mick Foy Tel : 01702 818413
 VENUE - D.P.S. Acorn House, Little Oaks, Basildon, Essex
 MEETS - First Monday of each month

South

POOLE MACINTOSH USER GROUP

CONTACT - David Huckle Tel : 01202 858411
 VENUE - Deverill Computers (dealer)
 Itcc House, 34-40 West Street, Poole, Dorset BH15 1LA
 MEETS - Four times a year

SOUTHAMPTON

CONTACT - Geoff Parson Tel : 07033-677115 (work)
 Tel : 07033-624170 (home)
 VENUE - Contact Geoff for details

Wales and West

BRISTOL GROUP (B.A.U.D)

CONTACT - Colin Rogers Tel : 01454 204117 (work)
 Tel : 01454 411170 (home)
 VENUE - Decimal Business Machines
 Three Queens Lane, Redcliffe
 MEETS - 7th day of each month, or the Friday nearest to it if the 7th falls on a Saturday or Sunday

HANTS & BERKS GROUP

CONTACT - Joe Cade Tel : 01494 461177
 VENUE - Thames Valley Systems (Apple Dealer),
 128 High Street, Maidenhead, Berkshire,
 SL6 1PT Tel 0628-25361
 MEETS - 7.00pm on the second Monday of every month

MACTAFF - SOUTH WALES MAC GROUP

CONTACT -
 VENUE - Apple Centre South Wales, Longcross Court
 47 Newport Road, Cardiff
 MEETS - Contact Apple Centre

Midlands

CAMBRIDGE APPLE USERS GROUP

CONTACT - JJ Ian Archibald Tel : 0223 311117
 Mac Richard Boyd Tel : 0223 444116
 VENUE - Impington Village College, New Rd, Impington, Histon.
 MEETS - Fortnightly during term time with both Mac and Apple II on deck each night.

EAST MIDLANDS MAC USER GROUP

CONTACT - Nick Helm Tel : 0115 270117
 VENUE - Wilford Cricket & Rugby Club, Nottingham
 MEETS - 8.00pm on the first and third Wednesday of every month.

GATEWAY COMPUTER CLUB

CONTACT - Vern Tel : 0115 270117
 Robin Boyd Tel : 0115 270117
 VENUE - Bob Hope Recreation Centre, R.A.F Mildenhall
 MEETS - AMS conference room, Mildenhall base.
 Normally at weekends, check with Robin
 NOTE : Although the venue is on a service base it is not in a security restricted area so the club is open to interested parties.

LEICESTER GROUP

CONTACT - Bob Bown Tel : (0533) 577222
VENUE - Shakespeare Pub, Braunstone Lane,
Leicester
MEETS - 7.30pm to 10.0pm on the first Wednesday of
every month

LIVERPOOL GROUP

CONTACT - Irene Flaxman Tel : (0151) 512127
VENUE - Check with Irene
MEETS - Second Monday of every month.

MIDAPPLE

CONTACT - Tom Wright Tel : (0562) 577111
VENUE - I.T.E.C., Tildasley Street, West Bromwich,
West Midlands
MEETS - 7.00pm on the second Friday of every month

THE MIDLAND MAC GROUP

CONTACT - Ivan Knezovich Tel : (0546) 487111
VENUE - Spring Grove House, West Midland Safari
Park, Bewdley, Worcestershire.
MEETS - 8.00pm on the first Tuesday of every month

WEST MIDLANDS AMATEUR COMPUTER CLUB

CONTACT - John Tracey Tel : (0922) 577777
VENUE - Hill Crest School, Simms Lane, Netherton,
Near Dudley.
MEETS - 7.00pm on the second and fourth Thursdays
of each month.
NOTE - - This is not an Apple user club, it is a
general interest club which welcomes users of
all machines. There are currently two Apple
user members.

North

BURNLEY APPLE USER GROUP

CONTACT - Rod Turnough Tel : (0752) 577111
VENUE - Michelin Sports Centre
MEETS - 2nd Wednesday of each month

CREW COMPUTER USER CLUB

CONTACT - Paul Edmonds
VENUE - Christ Church Hall, Crewe
MEETS - Fortnightly, Fridays, 7.30pm to 10.00pm
NOTE: this is a general interest group with
Apple users among its members

HARROGATE AREA

CONTACT - Peter Sutton Tel : (01937) 577111
No active organised group in this area but there
are a number of keen Apple users in contact with
each other.

THE NORTH EAST APPLE COMPUTER CLUB

CONTACT - Philip Dixon Tel : (0191) 577111
VENUE - Apple Centre North East, Ponteland Road,
Ponteland, Newcastle-on-Tyne
MEETS - First Wednesday of every month

THE NORTH WEST APPLE COMPUTER CLUB

CONTACT -
VENUE - Horse & Jockey Pub., Winwick Road,
Warrington
MEETS - First Monday of every month

THE NORTH WEST APPLE USERS GROUP

CONTACT - Max Parrot
Tel : (051) 577111
Tel : (051) 577111
VENUE -
MEETS - Ring Max

Scotland

EDINBURGH GROUP

CONTACT - Ricky Pollock Tel : (011) 577111
VENUE -
MEETS - Meetings monthly, check with Ricky

Postal

APPLE II PROGRAMMERS CLUB

CONTACT - Philip Dixon TEL : (011) 577111
VENUE - None established yet
MEETS - No meetings yet, has operated through
postal newsletter published quarterly
NOTE : Philip started the club some time ago based
on a membership fee of £1.00 to cover the cost of
newsletters. Original intention was to concentrate
on BASIC and Assembler programming.

New Groups

DORCHESTER

CONTACT - Ron Hoare Tel : (01306) 577111
VENUE -
MEETS - Meeting on March 1st -contact Ron Hoare

ORPINGTON COMPUTER CLUB

CONTACT - Terry Wheeler Tel : (01892) 577111
VENUE - G.E.A. Hall, Woodhurst Avenue, Petworth
MEETS - Contact Terry

DONCASTER SOUTH YORKSHIRE

CONTACT - Colin Withington Tel : (01924) 577111
VENUE -
MEETS - Contact Colin

LEEDS

CONTACT - Bob Miller Tel : (0113) 577111
- T Velupillai Tel : (0113) 577111
VENUE -
MEETS - Contact Bob

**If you want to start a group, find out about a
group that might be near you, please write or
contact John Lee the Local Group Organiser at
the PO Box in Liverpool, or phone John Lee on
0372 84 861.**

**If you are a local group organiser and have not
been in touch with John Lee, please contact
John with details of your group, or any
changes there may be to the above details.**

Members' Small Adverts are FREE.
Please help us to help you. Send your advertisements to us on a disk, in Mac or Apple II text format. We will return the disk, of course. This saves us time, and avoids errors.

Members' Small Ads

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**WARNING: The sale of copied or pirated software is illegal.
Please ensure that items offered for sale are new or are re-registered.**

FOR SALE

Superior II+ 64K compatible with
2 full ht. disk drives in PC-style case,
96 key full U/L keyboard£100
Applied Engineering Viewmaster-80
(II+ or //e)£50
Cirtech Champion parallel card£30
CP/M card£15

'Phone Peter Dyson 0242 334583

WANTED

Apple //c computer

'Phone Arthur Owen 061 928 1231

WANTED

- 1) Apple II contacts for the Stirlingshire area
- 2) Koala pad with or without software

'Phone Dave 08773 5395

FOR SALE

Apple //e computer
Sanyo monochrome monitor
2 genuine Apple disk drives
Apple Super Serial card
Apple communications card
All kinds of software (including Appleworks)
The lot£349.00

'Phone Vincent Holmes 01 370 7500

Adobe Announces New Software Package

The UK press launch of Adobe's new software product, TrueForm was the first 'official' launch (USA had to wait another couple of days).

The product was presented by representatives from Adobe Systems Europe - including the Managing Director and the Product Marketing Manager.

The package is specific to the Macintosh, and is designed to automate the completion of existing forms in use in offices.

The user first scans in an existing form, and this becomes the basis of data input. The package will accept forms saved in TIFF, EPS, PICT and MacPaint formats. The basic layout of the form cannot be edited within the program, but it is possible to import graphics (e.g. a logo).

There are two different packages - the Set-Up package allows the user to define fields, add formatting instructions, add arithmetic calculations, incorporate security, etc.; while the Fill-Out package allows the user to complete the data using the screen image of the form. The data is then retained on a database for future reference or editing.

This is not a tool for designing or drawing forms - it is a means of creating a database.

Two options are available for printing - either the whole document (including the form layout) may be printed onto plain stationery, or the data content alone may be printed onto a preprinted form.

The product is aimed at the Office Automation market, and comes complete with ten 'commonly used' forms. It will be available for shipping on August 10th (a common shipping date has been promised - worldwide).

Adobe TrueForm is compatible with Macintosh Plus, SE, SE/30, II, IIX or IIX computers and supports all PostScript printers. Although the availability date was given, no prices have been indicated. This question was not asked - it seemed that the journalists present were more interested in the possible repercussions of the sale of Apple's holding of Adobe shares than they were in the launch of a new product! Apple Computer (UK) Ltd had declined the invitation to the launch, as their representative was on holiday!

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THREE OF THE BEST

from

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Run MS-DOS programs on your Apple at more than *three times the speed* of an IBM XT.

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Installation Kit IIe, II+	£29.00
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TransDrive 360K Single-Drive	£149.00
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Mainstay ^{Europe} QUALITY SOFTWARE FOR THE MAC

Think 'n Time

New

Think 'n Time is the Macintosh visual organization tool that significantly improves productivity. It's great for developing and organizing ideas, projects, tasks, meetings, schedules, estimates and reports.

Organize Activities & Projects

Visually organize information using an extended desktop. Think 'n Time, T'nT for short, builds an organized tree of sheets and piles of electronic paper.

You create, open, close, collapse, expand and rearrange sheets and piles, all with point and click ease.

Drag sheets or piles to a new position in the tree to reorganize a subject. T'nT links text information to dates and times and numeric values in a completely integrated manner. It's handy for everything from project management to remembering important appointments and birthdays.

Organize Your Future!

Integrated date and time management functions provide an easy way to plan your personal and business activities. T'nT allows you to more effectively plan, schedule, organize, arrange, delegate, direct, control, monitor and analyze your work.

No matter how complicated your life, a "What's Next?" view provides a time-line organization, keeping you on track. A powerful search and browse capability gives you instant recall. Here's real help to handle multiple tasks and projects.

A desk accessory, T'nT is always available for taking down information and accessing ideas, dates, notes and data, eliminating slips of paper.

Think 'n Time £84.95



MacFlow 2.0

Fast, Clear Charts.

New Version

Simply drag chart objects into place and connect them with flow lines. Draw flowcharts up to ten times faster than with drawing programs or pen and pencil. Enter text into symbols, lines and labels with ease.

Changes are just as easy. Resize symbols and move them around as you like; lines stretch and stay attached. Changes are a snap with automatic grid alignment. Resize symbols and add or delete elements with cut, copy and paste ease. Graphically organize even complex programs, projects and structures fast!

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Use ANSI standard flowcharting symbols or custom design your own symbols with MacDraw™ or any "draw" type program. A hierarchical organization links a symbol on a top level chart to an entire lower level chart.

MacFlow 2.0 £175.00

MacSCHEDULE **New**

Visually plan how a project will get done. MacSchedule lets you create clear, graphic schedules fast! Schedules that took hours, now take only minutes. Revisions that almost meant starting from scratch now only take a few seconds.

MacSchedule allows the creation and modification of a schedule directly without elaborate flow diagrams or detailed tables of dependencies.

Status tracking is a snap. Work progression, early and late starts and schedule slips are easily handled. Schedules can be yearly, quarterly, monthly, half-monthly, weekly, daily or free-form. Print out clear, attractive presentations on an ImageWriter or LaserWriter.

MacSchedule addresses the real needs of people making real schedules. It's not complicated PERT chart software that almost requires a degree in project management.

MacSchedule is for the practical, top-down thinker who wants to clearly see the entire picture and then make sure that the job gets done.

MacSCHEDULE £175.00

V.I.P 2.5

New Version

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You program in a top-down, structured manner using objects, automatic logic forms, nested levels of routines and over 180 pre-compiled procedures

Power for professionals.

Develop and market your software using the run-time package with no extra license fees. V.I.P's also great for prototyping complex routines and models, even for other computers.

Follow-on products make V.I.P the language of choice. These include a series of translators — program visually and then turn a V.I.P program into source code for your favorite C or Pascal. Also available are procedure sets for speech, grid, ISAM, database, matrix, etc...

HyperCard External Procedures I

Starting with the new 2.5 version, V.I.P will let you write external procedures and functions for HyperCard™ (XCMD's & XFCN's) and V.I.P itself. This will require the new Translators to C.

V.I.P 2.5 £99.95

Grid Manager £54.95

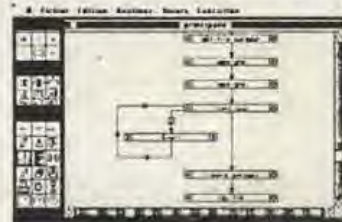
Telecom Manager £99.95

Advanced Manager I £89.95

DataBase Manager £245.00

Matrix Manager £89.95

Translators (Lightspeed C & Pascal, MPW C & Pascal, Turbo Pascal) £89.95



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